THE ALBERTA JOURNAL OF EDUCATIONAL RESEARCH

VOLUME XXVI NUMBER 3 SEPTEMBER 1980

PUBLISHED BY
THE UNIVERSITY OF ALBERTA • EDMONTON

THE ALBERTA JOURNAL OF EDUCATIONAL RESEARCH

A quarterly journal devoted to the dissemination, criticism, interpretation and encouragement of all forms of systematic enquiry into education and fields related to or associated with education.

Published quarterly in March, June, September, December by the
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AJER gratefully acknowledges support from the Social Sciences and Humanities Research Council of Canada and from the Alberta Advisory Committee for Educational Studies.

AJER is indexed in the *Canadian Education Index, Current Contents/Social and Behavioral Sciences,* and *Social Science Citation Index;* appropriate articles are abstracted in *Educational Administration Abstracts, Psychological Abstracts, Sociology of Education Abstracts,* and *Language Behavior Abstracts.*

The subscription rate is $8.00 per year; single copies are $2.50 each. Please make cheques payable to *The Alberta Journal of Educational Research.* All back issues are available; rates supplied on request. Claims for undelivered copies must be received within three months of the month of publication.

Address all communications and manuscript submissions to the Editor, *The Alberta Journal of Educational Research,* Faculty of Education, 732 Education South, The University of Alberta, Edmonton, Canada, T6G 2G5.

SECOND CLASS MAIL REGISTRATION NUMBER 1436

ISSN 0002-4805

The Alberta Journal of Educational Research

Volume XXVI, Number 3 *September, 1980*

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FACULTY OF EDUCATION
The University of Alberta

Alberta Journal of Educational Research *Vol. XXVI, No. 3, September, 1980*

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A Study of the Self-Concept of Intellectually Superior Children

This study was designed to compare the self-concept of intellectually superior students with self-concept of intellectually average students. The nature of the investigation also permitted a study of the relationships that existed among self-concept, intelligence test performance, reading comprehension, mathematics achievement, and overall composite achievement. The sample consisted of nineteen intellectually superior and nineteen intellectually average grade nine students. The TIPS, WISC-R, and CTBS were the instruments used to gather the data. Analysis of data indicated that no significant relationship existed between the self-concept and the four variables examined.

Various factors determine the behaviour of children. A child's self-concept is one key factor. Self theory holds that the self-concept is the frame of reference through which a child reacts with his world and as a result has a powerful influence on his behaviour. After fifteen years of research on self-concept, Fitts and his associates (Fitts, 1972; Fitts et al., 1971) were convinced that a person's self-concept is the key determinant of his behaviour. The self-concept is one of

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the most important aspects of an individual's phenomenal world and it tends to be relatively stable.

In recent years there has been a growing concern among educators about the forgotten minority in our schools, the intellectually gifted children. There has been some controversy whether this group of special children develop different self-concepts than do average children. In fact, some psychologists have raised the question whether indeed these gifted children perform significantly better than average children.

The importance of the intellectually superior child's self-concept as it relates to his total development has been theorized by many educational theorists. Barby (1965) found that the problems of personal adjustment increased with children whose intelligence reached scores of over 150. Meeker (1969) stated that the gifted are more likely to feel unwanted, unaccepted, and frustrated than are average children, due to their sensitivity to their environment. Educators such as O'Shea (1965) and Treffinger, Borgers, Reader and Hoffman (1976) emphasize that of all the personality variables affecting the overall development and eventual performance in the life of the gifted children, self-concept is most important.

Studies on the relationship between self-concept and intelligence have produced some contradictory findings. Sears (1963) found that children with superior mental ability had more positive self-concepts, more positive attitudes toward school, and were more creative than children with average ability. However, Nemeroff (1964), Trowbridge(1972), and Busby, Fillmer and Smittle (1974) reported low correlations between self-concept and intelligence.

Studies on the relationship between intelligence and achievement of intellectually superior children tend to be rather conclusive. That is, Terman (1965), Lovell and Shields (1967), and Flescher (1963) all found high correlations between intelligence and achievement of intellectually superior children. Seay (1961) found positive relationships between total self-concept levels and level of vocabulary, comprehension, and reading skills. Lumpkin (1959), comparing a sample of over- and under-achievers, found over-achievers possessed a more positive self-concept while under-achievers possessed a more negative perception of self. Coopersmith (1959) found low correlations between Iowa Achievement Test scores and self-esteem of fifth and sixth grade children. Williams (1973), however, found no significant correlations between self-concept and reading achievement of second grade students. Peper and Chansky (1970), in their study of fifth grade students, found there was a positive correlation between self-esteem rankings by self and mathematics achievement as measured by the Iowa Tests of Basic Skills.

The Problem

The study was basically designed to compare the self-concept of intellectually superior grade seven students with the self-concept of intellectually average grade seven students. Furthermore, investigators compared the intelligence test

performance and academic achievement of intellectually superior grade seven students and intellectually average grade seven students. A study of the correlations between self-concept, intelligence, and achievement was also undertaken.

Hypotheses

The following hypotheses were tested:

1. There is no significant difference between the mean self-concept score of intellectually superior and intellectually average students.
2. There is no significant difference between the mean reading comprehension grade equivalent score of intellectually superior and intellectually average students.
3. There is no significant difference between the mean mathematics grade equivalent score of intellectually superior and intellectually average students.
4. There is no significant difference between the mean composite grade equivalent score of intellectually superior and intellectually average students.

Definition of Terms

Self-concept: There are a variety of terms used to define the construct known as self-concept. Terms such as self-concept (Coller, 1971; Perkins, 1958; Rogers, 1961), self-image (Merrill, 1975), and self-perception (McCandles, 1966) are representative of the many used by researchers. For the purposes of this study, self-concept is defined as the dynamic organization of ideas and beliefs that an individual holds about himself. This definition has been used as a basis for the development of the Teachers' Inventory of a Pupil's Self-Concept (TIPS).

Intellectual ability: Intellectual ability is defined in terms of the student's performance on the Otis Beta and WISC-R intelligence tests.

Intellectually gifted: Intellectually gifted subjects were those subjects whose intelligence quotient score was 130 (Full-Scale Score) or over as measured by the WISC-R.

Intellectually average: Intellectually average were those subjects whose intelligence quotient score was between 90 and 109 (Full-Scale Score) as measured by the WISC-R.

Instruments

1. *Teachers' Inventory of a Pupil's Self-Concept (TIPS).* The TIPS is a self-report self-concept inventory developed by teachers in the Seven Oaks School District in Winnipeg, Manitoba, Canada, in 1975. Faculty members from the College of Education within the University of Winnipeg assisted the teachers in the development of the inventory. The Winnipeg teachers' objective in developing the inventory was to devise an effective way of assessing a Division II pupil's self-concept so that appropriate teaching strategies could be developed to help those students in need of viewing themselves more positively.

The format of the TIPS reflects the test developers' desire to overcome the unattractiveness of most self-concept inventories. The inventory comes in booklet form with each page pastel-coloured and illustrated with cartoon animals (e.g., cat, dog, owl, etc.). The booklet contains 13 pages with five statements per page to make a total of 65 statements. Statements to which children respond deal with their feelings about themselves in a variety of situations relating to work and play at home, school, and in the community.

The student is required to respond to the 65 declarative statements by circling either "yes" or "no" for each statement. To avoid having students make a set response, the inventory has an approximately equal number of positive and negative statements. Hence, both yes and no are appropriate responses to make.

The inventory is scored by tallying the number of statements answered in a way that depicts a positive self-concept. The total possible score for the inventory is 65. The higher the student's score, the more positive his self-concept.

The TIPS can be administered in a group situation. The inventory has no time limit for completion but the writer found that most grade four to seven students could complete it within a fifteen-minute time period.

Test-retest reliabilities for the TIPS ranged from a reliability coefficient of .74 for grade seven, .76 for grade five, .86 for grade four, and .88 for grade six students.

2. *Wechsler Intelligence Scale for Children — Revised (WISC-R), 1974.* The test was developed by David Wechsler and copyrighted by the Psychological Corporation in 1974. It is a revision and restandardization of the 1949 WISC. The WISC-R was designed and organized as a test of general intelligence. The test reflects Wechsler's definition of intelligence as the overall capacity of an individual to understand and cope with the world around him. The age range of the WISC-R is from six years zero months through to sixteen years eleven months.

The WISC-R is an individual intelligence test that consists of six verbal and six performance tests which yield a Verbal Scale I.Q., a Performance Scale I.Q., and a Full-Scale I.Q. The Verbal, Performance, and Full-Scale I.Q.'s have high split-half reliabilities across the entire age range, the *average* coefficients being .94, .90, and .96. The split-half (odd versus even times) reliabilities for the individual tests have *average* coefficients ranging from .77 to .86 for the Verbal tests, and from .70 to .85 for the Performance tests.

The test-retest corrected reliability coefficients range from .63 to .94 across three age levels (6.5 to 7.5 years, 10.5 to 11.5 years, and 14.5 to 15.5 years).

3. *Canadian Tests of Basic Skills (CTBS), Form 3, Levels 9-14, 1974.* The Canadian Tests of Basic Skills are based upon the Iowa Tests of Basic Skills. The CTBS are designed to assess levels of skill development in reading, vocabulary, the mechanics of writing language, methods of study, and mathematics.

The format of the CTBS consists of one test booklet of 96 pages for grades three through eight. The booklet is divided into various levels and each grade starts each of the 11 tests at the level appropriate for the grade placement. The questions in the booklet are multiple-choice type.

The students are asked to respond to the multiple-choice questions by filling in the circles on the separate answer sheet that correspond to their answer choices for the various questions.

The tests are scored by totalling the number of correct responses. Raw scores are converted into grade equivalents. To obtain the student's performance in a skill area the grade equivalents for the subtests in the skill area are averaged. For example, to obtain the student's skill level attainment in mathematics, all the mathematics subtest raw scores would be converted to grade equivalents then averaged. To obtain the composite score for the entire test battery, the five grade equivalents for the five skill areas assessed are averaged.

The CTBS were standardized in 1973 using a group of over 30,000 school children drawn from a stratified sample of some 255 schools from the English speaking sector in all provinces of Canada. Hence, both national and local norms are available for the CTBS.

Buros (1959, 1972) reports that the split-half reliability coefficients for both the Iowa Tests of Basic Skills and the CTBS are very high. The CTBS test manual (1974) states that for grade six (level twelve) the split-half coefficients using the Pearson product-moment correlation coefficient range from .81 to .93 for the various subtests. The composite test split-half reliability coefficient using the Spearman-Brown formula is .98 at the grade six level.

The entire test battery requires five hours to complete. The manual recommends that testing be done over a four-day period. The reading comprehension test and mathematics tests require an hour each.

The Sample

The population for the study consisted of students that fulfilled the following three requirements:

1. The students were enrolled in regular grade seven classrooms in the Regina Public School system for the 1976-1977 school year.
2. The students had written the Otis Beta Test in the school year 1973-1974, and obtained I.Q.'s in either the superior range (I.Q. 130 plus) or average range (I.Q. 99-109).
3. The students had written the Canadian Tests of Basic Skills during May, 1976.

The comparative part of the study involved a sample of 19 intellectually superior students and 19 intellectually average students chosen on a random basis from the population described above (see Table 1). To obtain the sample the writer employed a table of random numbers. The randomly chosen students

were then individually tested using the following measuring instruments: (a) Wechsler Intelligence Scale for Children-Revised (WISC-R) and (b) Teachers' Inventory of a Pupil's Self-Concept (TIPS).

TABLE 1

WISC-R TEST RESULTS FOR SUPERIOR AND AVERAGE STUDENTS

Variable	*Group*	*Mean*	*S.D.*	*T Value*	*Two-Tailed Probability*
WISC-R VERBAL	Superior	137.63	8.49	13.66*	.000
	Average	98.47	9.22		
WISC-R PERFORMANCE	Superior	130.11	8.00	8.79*	.000
	Average	105.68	9.12		
WISC-R FULL-SCALE I.Q.	Superior	137.89	5.57	19.44*	.000
	Average	101.63	5.93		

*Denotes significance at the .05 level of significance.

Data Analysis

Raw data were collected in the Regina schools and statistically analyzed using the computer program known as the *Statistical Package for Social Sciences (SPSS) Xerox Version 6.02.* For purposes of comparing the mean intelligence and self-concept scores, the *t*-test method of analysis was used. Correlations between intelligence and achievement were examined using the Pearson product-moment correlation formula. All hypotheses were tested at the $p>.05$ level of significance.

Hypothesis 1

The mean self-concept score obtaine on the TIPS was 50.53 compared to 46.90 for the intellectually average grade seven students. When the *t* test was applied, the difference in mean self-concept scores was not significant. Therefore, the hypothesis was upheld. See Table 2 for results.

TABLE 2

STATISTICAL DATA COMPARING THE TEST RESULTS OF INTELLECTUALLY SUPERIOR GRADE SEVEN STUDENTS WITH INTELLECTUALLY AVERAGE GRADE SEVEN STUDENTS

Variable	*Group (N=19)*	*Mean*	*S.D.*	*T Value*	*Two-tailed Probability*
TIPS	Superior	50.53	8.20	1.60	.120
	Average	46.90	5.55		
CTBS READING COMPREHENSION	Superior	8.96	.63	7.52*	.000
	Average	6.95	.99		
CTBS MATH COMPREHENSION	Superior	9.11	.54	6.63*	.000
	Average	7.20	1.13		
CTBS COMPOSITE ACHIEVEMENT	Superior	9.02	.49	9.10*	.000
	Average	7.07	.79		

**Denotes differences in means between the two groups are significant at the .05 level of significance.*

Hypothesis 2

Mean reading comprehension grade equivalent score of the intellectually superior grade seven students was 8.96 while the reading comprehension grade equivalent score for the intellectually average grade seven students was 6.95. Therefore, the hypothesis was rejected. See Table 2 for results.

Hypothesis 3

The mean mathematics grade equivalent score of intellectually superior grade seven students was 9.00 while the mean mathematics grade equivalent score of intellectually average students was 7.2. Therefore, the hypothesis was rejected. See Table 2 for results.

Hypothesis 4

The intellectually superior grade seven students achieved at the mean composite grade equivalent of 9.02 while the intellectually average grade seven students achieved at the mean composite grade equivalent of 7.07. The hypothesis was also rejected. See Table 2 for results.

Upon analysis of the correlations of self-concept with the variables of sex, intelligence and achievement, no significant correlations were found.

Correlation between the Otis Beta intelligence scores and the WISC-R scores

and the WISC-R Performance Scale scores was .76, while the correlation between the Otis Beta intelligence scores and the WISC-R Full-Scale scores was .87. WISC-R Full-Scale intelligence scores correlated .88 with the CTBS composite grade equivalents. See Table 3 for results.

TABLE 3

CORRELATION MATRIX FOR SUBJECTS IN THE STUDY

		1	2	3	4	5	6	7	8	9
1.	Sex									
2.	Beta I.Q.	-.05								
3.	WISC-R Verbal I.Q.	-.16	.83**							
4.	WISC-R Performance I.Q.	-.01	.76**	.70**						
5.	WISC-R Full-Scale I.Q.	-.10	.87**	.95**	.89**					
6.	CTBS reading comprehension	-.02	.81**	.87**	.69**	.86**				
7.	CTBS mathematics achievement	-.06	.71**	.78**	.67**	.79**	.79**			
8.	CTBS composite	-.02	.82**	.87**	.73**	.88**	.92**	.92**		
9.	TIPS	.21	.07	.20	.10	.18	.18	.16	.16	

*Denotes significance at the .05 level.
**Denotes significance at the .001 level.

Results of this study demonstrate that while the self-concept scores of intellectually superior grade seven students were somewhat higher than the self-concept scores of intellectually average grade seven students, the differences were not significant.

Results, however, did indicate that the intellectually superior grade seven children achieved at a significantly higher grade level in reading comprehension and mathematics. This same group of intellectually superior children achieved at a significantly higher overall composite grade level when considering results on all the CTBS tests.

Finally, the self-concept scores of the intellectually superior do not correlate significantly with intelligence and achievement.

Limitations

The study was limited by the nature of the instruments used. However, validation and reliability studies have been conducted on each instrument, and the instruments have been repeatedly used by researchers for a number of years.

A second limitation may be that of size of the sample. Factors such as attrition, incomplete records, and the researchers' objective to have the identical number of subjects in both groups resulted in a small sample.

Conclusions

Generalizability of the results in this study to other populations of intellectually superior children is possible only to the extent to which the students in the study represent the larger population of intellectually superior children.

1. Intellectually superior children did not have significantly higher (more positive) self-concept than intellectually average children. These results were contrary to Sears' (1965) findings; however, they tended to support the findings of Simon and Simon (1975) and Trowbridge (1972).

2. Relationships between self-concept and achievement concurred with the findings of Bishton (1957), Flescher (1963), Lichtman (1971), Lovel and Shields (1967), Seagoe (1972), and Terman (1965). The relationship was not significant.

3. Achievement in mathematics, reading and overall achievement by the intellectually superior children was significantly higher than that achieved by the intellectually average children. These results support the findings of Bishton (1957), Lovell and Shields (1967), Reed (1967), and Seagoe (1972).

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Effects of Social Relationships Curricula and Sex Differences on Reading and Imaginativeness in Young Children

In this study, the effects of social relationships curricula and sex differences on reading readiness and imaginativeness in five-year-old children were investigated. Several preliminary analyses were run on pretest scores. The results of a 2 x 2 (treatments by sex) analysis of variation or interaction effects on I.Q. Results of F_{max} tests on treatment-sex conditions (e.g., experimental-girls; control-girls) showed nonsignificant differences between groups on both measures. The main analyses consisted of two 2 x 2 (treatments by sex) analysis of covariance on reading and imaginativeness measures with post-hoc tests. The results indicated that children in experimental outperformed those in control treatments, girls outperformed boys on reading and imaginativeness, and experimental-girls did better than control-boys on imaginativeness.

Social relationships, regarded by Mand (1977) as the Fourth Basic 'R, has been largely ignored in formal school curricula at all grade levels. Social relationships, according to Mand, is the affective or social-cognitive capacity of the individual to relate to and be able to perceive the "other." Mand noted that social relationships is relegated to recess, free play, social education classes, or randomly spaced teacher-guided instruction depending on pupil's needs. Then too, the feeling that systematic planning is more important for cognitive than affective growth has long been an issue in early childhood and general curriculum

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development. Further, when growth of social relationships is seen as the opposite of cognitive development, similar to play juxtaposed to work, the importance of systematic planning for affective learning further diminishes. The push for the Basic Three 'Rs and disagreements over the objectives of schooling have helped to reduce the importance of the Fourth 'R in early childhood and curriculum programming.

However, some curriculum developers and planners are reconsidering the importance of social relations and other forms of affective curricula. For example, Tanner and Tanner (1975) and Ball and Bogatz (1973) on a more general level, and Evans (1975), Messick and Barrows (1972), and Palmer, Cazden and Glick (1971) for early childhood curricula emphasize planning, implementing and evaluating of social relationships curricula and other forms of affective learning in school programs. Then too, research results (Curry & Arnaud, 1974: Piaget, 1972; Singer, 1974) show that "imaging" or the capacity to project mentally the feelings and thoughts of others is the intersect between the development of social relationships, as one affective component, and cognition. Role play, the capacity to change oneself into another person or object, provides the opportunity for imaging to occur (Piaget, 1972; Singer, 1974; Smilansky, 1968).

More specifically, research results of Aspy and Roebuck (1976), Piaget (1972), Saltz, Dixon and Johnson (1977), Singer (1974), and Smilansky (1968) show that growth of social relationships is linked with development of both affective and cognitive processes and is significant to intellectual learning.

The research results of Aspy and Roebuck (1976) show a high positive correlation between students who had high ratings on social awareness and empathy and those who scored high on intelligence measures. These same students also had teachers who were rated high on personal regard for pupils' classroom performances. Similarly, the results of studies conducted by Saltz, Dixon and Johnson (1977) and Smilansky (1968) further: (a) support the importance of social relationships; (b) link it with cognitive growth and learning; and (c) show the impact of social relationships using role playing on intellectual and affective processes in young children. Saltz, Dixon and Johnson (1977) reported that children trained in social relationships curricula through role play showed greater empathy and feeling for others, demonstrated more individual and group impulse control, and made greater gains in cognitive growth than those in the control groups. The results of Smilansky's (1968) research, using role play episodes with children from high and low socioeconomic strata (SES), indicated that low SES subjects who role played and those who role played and received supplemental life experiences significantly changed their social and language behaviours toward the high SES (compared to other low SES subjects who did not receive role play experiences). The research results (Smilansky, 1968) of greater social awareness, more interpersonal actions of group members, and increased number of original words used in sentences (compared with baseline samples) show the importance of role play and its association with social relationships and language learning.

The research results of Aspy and Roebuck (1976), Saltz, Dixon and Johnson (1977), and Smilansky (1968) have: (a) documented the relationships of the Fourth 'R to intellectual and affective learning; (b) operationalized social relationships using its element of role play; and (c) showed the efficacy of developing, implementing, and evaluating social relationships curricula through role playing relative to intellectual and affective measures in young children.

The present investigation focused on the effects of: (a) social relationships curricula through role playing on measures of reading achievement and imaginativeness; and (b) sex differences on measures of reading achievement and imaginativeness in young children.

Previous research studies surveyed have not explored social relationships curricula through role playing: (a) on measures of reading achievement and imaginativeness in young children; (b) in conjunction with main effect of sex on the measures; and (c) as a Basic 'R that can be implemented and taught as a viable part of kindergarten curricular programming.

Accordingly, the null hypotheses of major concern in the study are that there will be no differences: (a) between social relationships curricula and control treatments on reading readiness and imaginativeness measures; and (b) between girls and boys on reading readiness and imaginativeness measures.

Procedures

Subjects

The subjects were 96 children five years of age. Twenty-four children, 12 girls and 12 boys, in each of four intact classrooms in four elementary schools in two adjoining suburban school districts were employed in the study. The schools and classrooms were chosen because of the cooperativeness of the teachers and building principals and because there was an equal number of girls and boys per classroom. With the names of the teachers placed on cards and pulled from a container (without replacement), two classrooms were randomly assigned as experimental and the other two as control treatment groups. All children were pulled from a middle class socioeconomic population as represented by the white collar occupations of the heads of household: sales and insurance personnel, education and nursing fields, secretarial staff, and other representatives of white collar professions (Warner, Meeker & Eells, 1960).

Procedure

Assessment. The pre- and post-assessment phases were administered in September and again in May of the school year. In the pre- and post-assessment phase, the children were administered the Gates MacGinitie Reading Readiness Skills Test (Gates & MacGinitie, 1968) and the Singer Imaginativeness Inventory (Singer, 1974). The Gates MacGinitie is a group test that measures reading

achievement across eight skill areas, such as listening and auditory comprehension, letter and word recognition. The child's responses are scored correct or incorrect. The Singer is an individually administered test, containing 10 questions, and assesses the level of imaginative predispositions in young children. An example of a stimulus item from the Singer is, "Do you have a make-believe friend? What are some of the things you do with your make-believe friend?" The child's answers per stimulus item are then scored on a 1 (i.e., low imaginativeness) to 5 (i.e., high imaginativeness) scale. In the pretest (but not in the posttest) phase, the subjects were administered the Peabody Picture Vocabulary Test: Form B to assess possible preliminary I.Q. differences among the four treatment groups. The treatments began after termination of the pretest phase.

Treatment. The duration of the experimental and control treatments was 15 minutes per day—five days per week across seven consecutive months. The treatments were administered immediately following the kindergarten mathematics readiness program rather than reading readiness to reduce possible "carry-over" effects of reading content into experimental and control conditions. To counterbalance for the time of treatment administration, one experimental treatment occurred in the morning and the other in the afternoon session, and in similar fashion the control treatments were divided between morning and afternoon, given full-day kindergarten programs.

In the experimental treatment, the two teachers implemented social relations curricula through role taking. Basically, they were trained to employ eight basic strategies for developing and using role play with young children. The strategies, described in detail elsewhere by Yawkey (in press), focused on: (a) setting up role play experiences in individual and small groups (of no more than five participants); (b) using shared communication between peers and between the adult and child for role taking experiences; (c) employing incidental learning experiences as role activities; and (d) utilizing children's stories read to pupils as grist for role play activities. From the perspectives of social relationships, the experimental treatment emphasized feelings, concerns and interests of the students, perceptions of the other, cooperation, helping, and individual and social group problem-solving through role enactment. Essentially, the students in the experimental group were required to view themselves in relation to the other.

In the control treatment, the two teachers used ordinary paste and cut and art and craft activities. The activities in the control group were completed on an individual basis by children working at their desks. The type and form of the experiences helped minimize child-child interaction while at the same time emphasizing work products and their completion. In addition, the activities in the control treatment were motor based and required the children to use small and large muscles and motoric movements. The paste and cut and art and craft experiences were largely based on holiday themes and special events that occurred in the elementary school during the weeks and months. A secondary

source for the activities was art and craft books from which various independent seat-work activities were selected by the teacher.

Analysis

A number of analyses were initially conducted on the pretest measures. For the initial pretest analysis, the results of the variables of treatment groups (i.e., experimental versus control) and sex (i.e., boys versus girls) on Peabody Picture Vocabulary Test (P.P.V.T.) scores, using a two-way analysis of variance to test null hypotheses of no differences on P.P.V.T.-I.Q. between and within conditions, showed that neither main nor interaction effects were significant (i.e., for treatments, $F = 1.22$, df $= 1/92$, $p > .05$ and for sex, $F = 1.95$, df $= 1/92$, $p > .05$).

For the Gates MacGinitie, the raw scores ranged from 0 to 142 and for the Singer, 10 to 50 (with inter-rater agreement of .93 for the pretest and .98 for the posttest). Two other analyses, prior to treatment, were run on the Gates MacGinitie and Singer pretest socres. Hartley's F_{max} test, as described by Winer (1962), was used across four treatment-sex conditions (i.e., experimental-girls, control-girls, experimental-boys, and control-boys) on pretest Gates MacGinitie and for pretest Singer scores. The F_{max} test for homogeneity of variance was used to determine whether the subjects in the treatment-sex conditions differed from one another on Gates MacGinitie and Singer scores prior to treatments. The results of the F_{max} test showed that the subjects did not differ significantly across treatment-sex conditions on the Gates MacGinitie and Singer measures. Preliminary analyses showed that across the four classrooms, the subjects in the treatments by sex conditions on P.P.V.T. and treatment-sex conditions on Gates MacGinitie and Singer measures were homogeneous relative to the tests and treatment groups employed.

For pre-posttest analyses, the variables of (a) experimental and control treatments and (b) girls and boys were crossed orthogonally implying a 2 x 2 factorial analysis of covariance as described by Winer (1962). Two separate analyses, one on the Gates MacGinitie and the other on Singer were run with pretest scores serving as the covariate variable and the posttest scores the criterion variable for each set of measures, respectively.

On the Gates MacGinitie measure, the results of the analysis showed significant main but no significant interaction effects. On the Singer measure, the results of the analysis evidenced significant main and interaction effects. The summary table for the analysis for covariance on the Gates MacGinitie and Singer measures are shown in Tables 1 and 2, respectively. The pre- and post-group means by treatment on the Gates MacGinitie and Singer measures are illustrated in Table 3.

TABLE 1

SUMMARY FOR ANALYSIS OF COVARIANCE FOR MAIN AND INTERACTION EFFECTS ON GATES MacGINITIE SCORES FOR TREATMENT AND SEX

Source	*df*	*SS*	*MS*	*F*
Treatment	1	160892.52	160892.52	04.71*
Sex	1	431491.68	431491.68	12.71*
Treatment x Sex	1	4921.02	4921.02	1.45
Residual	92	33941.58	1493429.70	

*$p<.05$

TABLE 2

SUMMARY FOR ANALYSIS OF COVARIANCE FOR MAIN AND INTERACTION EFFECTS ON SINGER SCORES FOR TREATMENT AND SEX

Source	*df*	*SS*	*MS*	*F*
Treatment	1	30.08	30.08	8.48*
Sex	1	21.33	21.33	6.01*
Treatment x Sex	1	56.33	56.33	15.87*
Residual	92	156.17	3.55	

*$p<.05$

Using a Scheffé post-hoc statistic on significant main effects of treatments and sex on the Gates MacGinitie scores the results indicated: (a) social relationships treatment group yielded significantly higher mean scores than the control and (b) girls yielded significantly higher mean scores than the boys. The Scheffé post-hoc statistic on the results of the Singer analysis showed: (a) social relationships treatment group yielded significantly higher mean scores than the control; (b) girls yielded significantly higher mean scores than the boys; and (c) the girls in the social relationships group yielded significantly higher mean scores than the boys in the control condition.

TABLE 3

PRE- AND POSTTEST GROUP MEANS BY TREATMENT ON GATES MacGINITIE AND SINGER MEASURES

	Pretest Group Means by Treatment		Posttest Group Means by Treatment	
Measures	*Experimental* $\overline{X}$	*Control* $\overline{X}$	*Experimental* $\overline{X}$	*Control* $\overline{X}$
Gates- MacGinitie	55.02	49.91	67.10	55.01
Singer	8.91	8.63	13.90	11.71

Discussion

The investigation explored the effects of social relationships curricular compared to control treatments on measures of reading readiness and imaginativeness. The major results of the study were: (a) on reading readiness measures, social relationships curricular group yielded significantly higher mean scores than the control treatments and girls significantly outperformed boys; (b) on the measures of imaginativeness, social relationships curricular group yielded significantly higher mean scores than the control treatments and girls outperformed boys (across the groups); (c) on imaginativeness the girls in the social relationships performed significantly better than boys in the control conditions.

The results of the study, supporting previous research (Aspy & Roebuck, 1976; Saltz, Dixon & Johnson, 1977; Smilansky, 1968), indicate that social relationships was a facilitator of cognitive learning of reading readiness concepts. Aspy and Roebuck (1976), using I.Q. measures, and Piaget (1972) with cognitive tasks, have both recognized the association between social relationships and cognitive tasks. Saltz, Dixon and Johnson (1977) note that social relationships through role play appeared to facilitate the identification process of the young child with the story characters and situations and increased motivational properties relative to intelligence and impulse control. Further, role play, permitting the children to feel, act, and think like the characters in the story passages, helped them to relate to the situations in the episode and facilitated their understandings of story content and concepts (Saltz, Dixon & Johnson, 1977). Smilansky's results (1968), in addition, indicate that imaginative play increased children's language learning (relative to baseline measures) on: (a) the number of sentences and non-repeated words used in them and (b) the frequency of using contextual clues to derive word, sentence, and paragraph meaning.

On group reading achievement measures, the fact that differences between boys and girls appeared after seven months of formal reading readiness instruction was consistent with the results of other investigations (Duncan, 1976; Klein, 1977; Stanchfield, 1970). Cultural, biological, and psycholinguistic theories have attempted to explain observed differences favouring girls over boys in early formal reading instruction. The effects of treatments in the present study apparently "washed out" given large observed differences favouring girls in reading.

The results on the Singer showed that the imaginative predispositions of young children significantly increased through social relationships training. Although the same amounts of classroom time were given to treatment conditions, children in the social relationships curricula using role play received significantly higher scores on imaginativeness than those in the control treatment. According to Piaget (1972), role play as a cognitive imaging process requires imaginativeness in which the child (a) suspends reality, in differing degrees, to achieve personal and/or social group goals and (b) uses make-believe in greater or lesser degrees to reconstruct reality. Accordingly, role play could have provided an escape from reality and assisted flexibility and originality of thought. Feitelson and Ross (1973) and Saltz, Dixon and Johnson (1977) have reported similar effects for role play on imaginativeness and originality of thought.

On the Singer inventory, girls did significantly better than boys on imaginativeness across groups. Further qualifying the results was a significant interaction effect which showed that girls in social relationships significantly outperformed boys in the control group. The results of Garvey (1977), Jones (1972), McCune and Mathews (1976), and Millar (1976) also showed performance differences between girls and boys in imaginativeness and role play preferences, quality of make-believe, types of play, and quality and quantity of language generated during play. Specifically, Garvey's results indicate that verbal abilities in role play and general language performance in formal academic settings were greater for young girls than for young boys. Conceivably, the task required in social relationships treatment group could have been more conducive and facilitative for girls than for boys, considering its emphasis on verbal language (compared to the control condition). Also, the results of Jones and of McCune and Mathews showed that young girls preferred play forms with verbal rather than physical elements.

There were a number of distinct limitations to the study: (a) student populations and their SES levels used in the research; (b) measures employed in assessing behaviours; and (c) the procedures employed in the treatment groups.

Further research might find solutions to the following extended questions:

1. What differential effects, if any, would child-generated versus adult-guided social relationships curricula have on reading readiness curricula and imaginativeness of young children?

2. What differential effects, if any, would verbal, verbal-motor, and motor forms of role play as rehearsal conditions have on reading readiness and imaginativeness of girls compared to boys?

3. What differential effects, if any, would fantasy versus reality based role play as rehearsal conditions have on reading readiness and imaginativeness of young children?

The author expresses appreciation to Research and Program Development Division, The Economy Company Educational Publishers, Oklahoma City, Oklahoma for providing funds for the research investigation.

Portions of the paper were presented at the Annual Meeting of the American Educational Research Association, San Francisco, 1979.

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Alberta Journal of Educational Research *Vol. XXVI, No. 3, September, 1980*

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Children's Knowledge About Skimming

Grades 4, 6, and 8 children were interviewed to investigate their awareness of skimming techniques. Their strategic search behaviour for specific pieces of information in passages was also observed. Many children at all grade levels were able to think about (a) what the opening sentence generally does for a paragraph, and (b) how the sought-for information may be expressed in a passage. Using this knowledge (a and b), virtually all of the grade 8 but only one-half to two-thirds of the grades 4 and 6 children were able to describe "how to skim." Children in all three grade levels could skim when explicitly instructed to do so, but spontaneous skimming as a strategy based on implicit task requirements was most clearly observed at the grade 8 level. It was concluded that the development of knowledge about skimming is an increasing integration of various pieces of knowledge concerning learning materials, means-end relationships, and implications of specific task demands.

Children's ability to think about their own cognitive processes (generally known as metacognition) has become an important topic in the investigation of cognitive development (e.g., Brown, 1978; Flavell, 1978; Flavell & Wellman, 1977). Many of the existing studies have centered on children's knowledge about their

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memory abilities and the strategies they use for the learning of simple memory tasks, e.g., recall of a list of pictorial items (see review articles by Brown, 1978; Flavell & Wellman, 1977). In contrast, relatively little is known concerning children's awareness of many other strategies that are likely to be used in the acquisition of meaningful information common to school requirements (Brown, 1978; Flavell, 1977), although some recent explorations have been made in this extended direction (e.g., Brown & Smiley, 1978; Brown, Smiley & Lawton, 1978; Danner, 1976; Myers & Paris, 1978).

In the present study, the development of knowledge about one locational skill was investigated, viz., the search for information in a prose passage. The importance of such a skill in school learning has been emphasized by a number of experts on reading and study strategies (e.g., Spache & Spache, 1977; Thomas & Robinson, 1975). This emphasis is understandable considering the fact that today new information is discovered and accumulated with increasing rapidity. A single classroom textbook can no longer be regarded as a sufficient and up-to-date source of information for most content areas (e.g., social studies, science). Students' success in school learning, therefore, is increasingly more dependent on their knowledge as to where and how to locate new information efficiently (Thomas & Robinson, 1975). In view of this, the present study should provide useful data for our understanding of the development of "ecologically valid" study strategies in children.

Efficient search for information depends on various pieces of knowledge. Students, for example, need to know the existence of such reference materials as the dictionary, encyclopedia, and periodicals, and when and how to use them. They need to know how to use parts of a book (e.g., table of contents and indexes) as aids in locating relevant sections. They further need to know and use the skill of skimming to find specific pieces of information within the relevant sections. While some normative data for children's knowledge about reference materials and book parts are available (e.g., King, 1968), comparable data are unavailable for the development of skimming skills. For this reason, from among various locational skills, the strategy of skimming was investigated.

Imagine now that children have located a book with sections containing information that bears upon their research problem. How do they proceed to find pertinent information in these pages? One piece of knowledge that children may learn is that, in looking for a single fact, the reading of entire paragraphs is unnecessary. Instead, they learn they can glance swiftly down the pages, skipping everything but target information. This type of effective search involves at least two pieces of knowledge: (a) opening sentences of a paragraph often introduce its general content and thereby indicate whether or not the sought-for information is likely to appear in it, and (b) sought-for information is likely to appear in the form of key words, numerical figures, symbols, etc., and a search can be made quickly by skipping all but these predetermined "clues" (Spache & Spache, 1977; Thomas & Robinson, 1975). The investigation of these children's pieces of knowledge about when and how to skim provided the major focus of this study.

In the present study, both behavioural and verbal tasks were used. In previous interview studies, children generally showed better metamemorial "ability" when they actually experienced in memorizing items (e.g., Moynahan, 1973). Thus, to assess fully children's awareness of how to skim, they initially were presented with tasks requiring skimming strategies (behavioural tasks). The behavioural tasks were also included to provide some data concerning children's knowledge about when to skim. Under the behavioural tasks, children were asked to read four comparable short stories under four different instructions. The first condition was designed to ensure that the children would read the whole story word-by-word and thereby provide a baseline measure of reading speed. The second and third conditions were designed to assess children's spontaneous disposition to use knowledge about paragraph structure and key words, respectively, for effective skimming. Under each of these two conditions, the children were told to find one specific fact in a passage. If children are knowledgeable about when to skim, stories would be read faster under the second and third conditions than under the first. In addition, even if children have appropriate knowledge about skimming strategies, they may not show differentiated reading behaviours under the present tasks for at least one reason. They simply may not have the required skills to carry out what they know. To determine this possibility, the fourth condition was used under which the children were given key words and were explicitly instructed how to use these to locate a piece of information.

Following the completion of the third behavioural task described above, a series of interview questions (verbal task) were presented to the children to assess their verbalizable knowledge about "how to skim" efficiently using the paragraph structure and key words. Attempts were made by these questions to test the lower limits of children's understanding of such strategies.

Children of grades 4, 6, and 8 participated in this study. The grade 4 children were used because children at this grade level begin to learn various locational skills, including the skill of skimming. Teachers concentrate on such skills throughout the subsequent grade levels. Thus, one might expect a developmental change to occur in children's knowledge about skimming within this age range.

Method

Subjects

Subjects were 24 grade 4 (12 boys and 12 girls), 24 grade 6 (12 boys and 12 girls), and 14 grade 8 (8 boys and 6 girls) children from a parochial school[1] in a predominantly lower-middle and middle class suburb of Windsor, Ontario. The mean chronological ages were 9-11, 12-1, and 13-11 for grades 4, 6, and 8, respectively. According to their teachers' judgments, none of these children should have had difficulty in reading the materials used in this study.

Materials

Prose passages. Four sets of factual prose passages, each at the grade 3.8 readability level (Spache, 1953), were prepared for the behavioural tasks. Two sets were about bears and two about cities. The materials were similar to those found in a children's encyclopedia.

Sets 1 and 2 each contained two paragraphs. In set 1, various characteristics of the brown bear were described in the first paragraph while characteristics of the polar bear were described in the second. The first paragraph was used to obtain the baseline measure and the second paragraph to acquaint the children further with the paragraph structure. In set 2, the major features of the black bear were described in the first paragraph and those of the grizzly in the second. The general content of each paragraph was introduced by the first sentence so that children could completely skip a task-irrelevant paragraph (e.g., black bear) and proceed to the second one (e.g., grizzly bear) if asked to locate a specific answer about the grizzly. The amount of time allocated by the children on these first paragraphs constituted the critical behavioural measure. Thus, the length of the first paragraphs in each of the two sets was equated, both containing 121 words.

Each of the remaining two sets consisted of a single paragraph containing various pieces of information about Vancouver (set 3) or New York City (set 4). The target information requested, the average temperature of each city during the winter, was located at the 121st word, and was expressed in numerical form followed by the symbol for temperature degree. No other temperature information or numerical figure appeared in either of the paragraphs. All four sets were made so that the experimenter could measure the speed with which children read the same length of the material (i.e., 121 words) under four different conditions.

Each of the four sets was typewritten on plain white paper (22 x 28 cm) with each paragraph printed on a separate page. Each set was presented separately with a blank paper as the cover page.

Interview questions. Two major sets of interview questions were prepared for the verbal tasks. One set was prepared to assess children's knowledge about paragraph structure for use in efficient skimming while the other was prepared to assess knowledge about the use of key words. These interview questions are given verbatim in the Results and Discussion section.

Procedure

The children were tested individually in a quiet room. Testing was carried out in three phases. In phase 1, behavioural measures (reading speeds) were obtained under different task demands to provide evidence for children's awareness of when to and when not to skim. In phase 2, the children's verbalized knowledge about skimming strategies was assessed by the verbal task. Finally, in phase 3, the children's basic skills to perform skimming strategies were examined by the behaviour task.

Phase 1. The experimenter began this phase by saying: "Today I have some stories for you to read and a few questions I would like to ask you." Having assured that the children knew that there were four kinds of bears in North America, the experimenter gave the children set 1 to obtain the baseline measure of reading speed (hereafter called whole story condition). The following instructions were used: "I want you to read every line so that you have read everything that is in the story. The story is written on two separate pages. When you have finished with the first page, go right on to the second one." The speed with which the children read the first paragraph was measured by using a Hunter 1910 timer to the nearest second. The experimenter manually activated the timer when the children turned the blank cover page and then stopped it when they turned the page containing the first paragraph.

The experimenter then proceeded to the second task in which the children could skim efficiently by using the opening sentence of a paragraph (paragraph condition). They were told: "This time, I want you to find just one thing from the story. Where does a grizzly bear usually live?" The children were also told to underline the sentence that contained the requested information. To ensure that the children would remember their task, they were asked to repeat what they were searching. The children then began the second task. The amount of time required to read the first paragraph of set 2 was measured. Since the first paragraph contained material on the black bear, this could be skipped if the children were skimming efficiently. When the children finished underlining the target sentence, they were asked how they read the story to find the answer.

The experimenter then initiated the third task in which skimming for key words could locate the target information (keyword condition). The children were again told to "find just one thing: How cold is it in Vancouver in the winter? " Again they were told to underline the target sentence, to repeat what they were seeking, and then given set 3. The experimenter measured from the time they turned the first page until they began to underline the sentence. They were then asked how they read the material to find the answer.

Phase 2. Immediately following the completion of the three behavioural tasks, the children were interviewed with the two major sets of questions. These items were presented in the same order (as seen in Results and Discussion) for all children. The experimenter emphasized that there were no right or wrong answers. If a child was unable to answer a question, it was repeated or rephrased until some answer was given. The entire interview session was tape-recorded.

Phase 3. Finally, the experimenter told the children how to use key words to locate information quickly (explicit condition). The children were asked to find "just one thing" from set 4: "How cold is it in New York City during the winter?" They were told to find the answer "as quickly as you can by looking for such words as temperature, a number, or the degree symbol." As in the other behavioural tasks in Phase 1, measures were taken from the time the children

turned the first page until they began to underline their answer. When the children were finished with the final behavioural task, they were thanked for their participation in the study and then sent back to their classroom.

Scoring

Each child's verbal responses were transcribed into a written account from the tape-recorded interview. Lengthy responses were reduced to short summaries that were semantically equivalent to the original reports. Several categories for each interview item were then generated that could be used to classify the children's responses. Based on these categories, two judges independently scored the responses for each of the protocols. Interjudge reliability ranged from 93 to 100%. Scoring disagreements between the judges were resolved through mutual agreement.

Results and Discussion

Behavioural Data

The amount of time required by each child to read 121 words under each of the four conditions (whole story, paragraph structure, key word, and explicit) was obtained as behavioural measures. The time data obtained under each of these conditions are summarized in Table 1. A 3 (grade) x 4 (condition) analysis of variance performed on these data yielded significant main effects for grade, F (2,59) = 29.37, and for condition, F (3,177) = 152.07, $p < .001$. The different instruction conditions produced different effects on reading speeds at the three grade levels and, consequently, a significant grade x condition interaction was observed, F (6,177) = 6.22, $p < .001$.

TABLE 1

MEAN AMOUNT OF TIME SPENT ON THE PROSE PASSAGES UNDER THE FOUR CONDITIONS

	Condition			
	Whole Story	*Paragraph Structure*	*Key Word*	*Explicit*
Grade 4	55.10	48.17	53.43	13.42
Grade 6	46.99	36.08	40.64	11.90
Grade 8	33.51	18.59	20.81	7.25

Note. Time given in seconds.

Further analyses of the significant interaction in terms of Duncan 's multiple range test revealed: (a) The grade 4 children did not differ in reading speeds under the whole story, paragraph structure, and key word conditions ($p > .05$). They read the story significantly faster only under the explicit condition when compared to the whole story condition. (b) In contrast to the grade 4 children, the grade 6 children read the material faster under the paragraph structure condition than under the whole story condition. Although the mean reading speed for the key word condition differed only marginally from that for the whole story condition, this was mainly due to the fact that one child had unusually long reading time (109.3 sec) under the key word condition. (c) At the grade 8 level, the children read the passages faster when they were told to find "just one thing" (i.e., paragraph structure and key word) than when they were told to read the "whole story," $p < .01$. As can be seen in Table 1, these children also benefited from the explicit instruction to use key words.

Also, the significant interaction of grade and condition indicated that the reading speeds did not differ across the three grades under the explicit condition, although the older children read the materials with significantly faster speeds than the younger children under the remaining three conditions, F (2,59) = 22.74, 31.41, and 16.44, $p < .001$, for the whole story, paragraph structure, and key word conditions, respectively. It may be added that all of the children underlined target sentences correctly under all of the three task conditions, indicating that these children recalled the task demands while reading and verified the answer when it was found.

The observed differences in reading speeds between the conditions of whole story and paragraph structure or key word, suggest that children, as they grow older, become increasingly more knowledgeable about when to skim. This observation is consistent with the previous researchers' (e.g., Myers & Paris, 1978) conclusion that grade 6 and older children have general knowledge that they should read stories differently depending on task goals. Many of the younger children failed to modify their reading speeds when asked to locate one specific piece of information. This may be partly because some of these children were insensitive to implicit task demands and partly because others did not know how to skim. It is clear, however, that even grade 4 children have basic skills to carry out skimming strategies required by the key word condition (data for the explicit condition).

Verbal Data

Paragraph structure. To investigate children's knowledge about the use of the first sentence of a paragraph to search for information in a passage, a general question was asked first (item 1). It was general in that the word "paragraph" was not used in the question.

1. "Suppose you want to teach one of your classmates how to find out from this story (referring to the story about bears) where a grizzly bear usually lives.

How would you teach them to find the answer quickly?" Table 2 shows how children of different grade levels responded to this item. Responses were labelled "specific skimming" if they specified how another child could skim the story (e.g., "Tell him to skim for the word live." "First, you look for the word grizzly. And when you find the part about the grizzly bear, then you look for the word live."). Responses were categorized "nonspecific skimming" if they said that they would tell a classmate merely to "read fast" or to "skim for the answer." Any response that did not indicate a method for finding the answer quickly was classified as "other forms of reading" (e.g., "Read everything in the story." "Tell him to read the story carefully").

TABLE 2

PROPORTION OF CHILDREN AT EACH GRADE LEVEL GIVING VARIOUS TYPES OF ANSWERS TO ITEM 1 (PARAGRAPH STRUCTURE)

	Specific Skimming	*Nonspecific Skimming*	*Other Forms of Reading*
Grade 4	.50	.00	.50
Grade 6	.54	.25	.21
Grade 8	.93	.07	.00

As can be seen in Table 2, one-half of the grades 4 and 6 children and virtually all of the grade 8 children specified how one may use skimming strategies to search for a piece of information in written materials. None of the children, however, explicitly mentioned how one may use the opening sentence of a paragraph to skim strategically. Six grade 8 children, but none of the grades 4 or 6 children, mentioned a "two-stage" skimming strategy (first grizzly, then live), as is illustrated by the second example of the "specific" category. The data summarized in Table 2 were analyzed by forming three 2 (e.g., grade 4 vs. grade 6) x 2 (specific skimming vs. combination of the remaining 2 categories) tables.[2] The observed age differences between grades 4 vs. 8 and grades 6 vs. 8 were statistically reliable χ^2 (1) = 5.44 and 4.47, respectively, $p < .05$. When the "specific" and "nonspecific" categories were combined, there was a trend for more of the grade 6 (79%) than the grade 4 (50%) children to say "skim" ($p < .10$), suggesting that more of the children in the middle-aged than in the youngest groups had at least a general idea about what activity was required. In this further analysis, the difference between the grades 6 (75%) and 8 (100%) was not significant.

While none of the children explicitly referred to the use of paragraph structure for the purpose of efficient skimming, this may not necessarily mean that such knowledge is absent. The idea might not have occurred to them with the general question. In order to determine this possibility, the following two sets of questions (items 2 and 3) were asked. Item 2 was included to introduce item 3 to children.

2. "Some students tell me that when they are looking for just one thing in a story, they do not read all of the paragraphs. They say that they skip some of the paragraphs. Do you ever read this way when you are looking for a piece of information?" Fifty-four percent of the grade 4, 71% of the grade 6, and 93% of the grade 8 children indicated that they sometimes skip paragraphs. The analyses of the data showed that only the difference between the grades 4 and 8 was significant, χ^2 (1) = 4.47, $p < .05$, revealing that more of the Grade 8 than grade 4 children affirmed the use of skimming strategies.

3. "How do you (or these students) find out which paragraphs you (or they) can skip? How do you (or these students) find out which paragraph you (or they) should read?" With this item, 37% of the grade 4, 50% of the grade 6, and 80% of the grade 8 children said that they would decide whether or not to read the whole paragraph by reading the first few sentences of the paragraph (e.g., "I would read the first sentence." "I would read the first sentence and then skim to see if there were any words related to my topic in it."). The analyses of the data by forming the four-fold contingency tables (e.g., grade 4 vs. grade 6 x paragraph structure vs. other responses) indicated that significantly more of the grade 8 than grade 4 children referred to the use of a paragraph structure for deciding the relevancy of a particular paragraph, χ^2 (1) = 6.48, $p < .02$. The difference between the grades 8 and 6 was marginally significant ($p < .10$), while the difference between the grades 4 and 6 was not.

Does the age-related change observed in the children's responses to item 3 reflect the possibility that more of the older than the younger children were aware of the function of the opening sentence of a paragraph? To examine this question, the children were presented with item 4.

4. "What information does the first sentence of a paragraph usually tell you?" Recently, Myers and Paris (1978) concluded that a majority of grade 6 children are aware of the function of the first sentence of a paragraph. This conclusion may be extended to even younger children. Thus, 71% of the grade 4, 79% of the grade 6, and 93% of the grade 8 children said that the first sentence indicates what the content of a paragraph will be ("They tell you what you'll find out in that paragraph." "They tell you what the paragraph's going to be about."). None of the comparisons between different grade levels was statistically significant. The findings for items 3 and 4 suggest that both younger and older children are equally aware of the function of the first sentence of a paragraph, but older children are more likely than younger children to apply this knowledge to situations of information search. Among those children who knew the function of the first sentence (item 4), 41% of the grade 4 children, 63% of the grade 6

children, and 85% of the grade 8 children were able to provide adequate responses to item 3.

Key words. To investigate children's knowledge about how to use key words to locate a piece of information in a passage, item 5 was prepared.

5. "When you look for the temperature of Vancouver during the winter, is there any way you can find this information right away?" Table 3 summarizes how children responded to item 5. Responses were classified as specific skimming if the children said that they would skim for specific key words or symbols to find the answer quickly (e.g., "Skim the story for a number and the degree symbol." "Look over the story quickly for the word temperature."). Responses were scored as nonspecific skimming if the children merely said they would "read fast." Responses that did not indicate a method for locating the answer quickly were classified under "others" ("I just read the story." "I read everything in the story."). As can be seen in this table, the proportions of the children in the specific skimming category increase as a function of age. The analyses of the data indicated that only the difference between grades 8 and 4 was significant, χ^2 (1) = 4.47, $p < .05$.

TABLE 3

PROPORTIONS OF CHILDREN AT EACH GRADE LEVEL GIVING VARIOUS TYPES OF ANSWERS TO ITEM 5 (KEY WORD)

	Specific Skimming	*Nonspecific Skimming*	*Other Forms of Reading*
Grade 4	.54	.00	.46
Grade 6	.79	.08	.13
Grade 8	.93	.07	.00

About one-half of the grade 4 and one-fifth of the grade 6 children did not refer to the use of key words spontaneously in response to interview item 5. This finding may be due to the inability of these children to anticipate the form in which the answer may be expressed. The children's responses to the following question (item 6) indicate that this was not the case for the majority of the children.

6. "What might give you a clue where this information (temperature of Vancouver) could be located? What other clues might help you to find this information quickly?" When only the first responses given to item 6 were considered, 83% of the grade 4, 100% of the grade 6, and 93% of the grade 8

children were able to give a good key word (e.g., temperature, degree symbol, number). A comparison of "presence of a good key word" and "absence of a good key word" across grades yielded a nonsignificant result, indicating that children at all three grade levels are equally likely to think of a good key word for this question.

The children were encouraged to think about as many "good clues " as they could. The mean number of good clues generated were 2.2, 2.9, and 2.9 for grades 4, 6, and 8, respectively. These scores were not statistically different. The data for item 6, therefore, suggest that after grade 4 there may not be age-related differences in children's ability to anticipate how the information may be expressed in a passage *if* one uses tasks similar to the present one.

Of those children who could anticipate how the sought-for information might be expressed in a passage, 65% of the grade 4, 79% of the grade 6, and 100% of the grade 8 children used this knowledge to provide the specific skimming responses to item 5. This developmental trend is quite comparable to that just described for items 3 and 4 (see the section for item 4).

Conclusion

Based on the results, what can be said regarding the development of children's knowledge about skimming strategies? The discussion will be focused on this question.

The use of the strategies considered in this study requires several pieces of knowledge and cognitive skills. First, a child must know (a) what the opening sentence generally does for a paragraph and (b) how the sought-after information may be expressed in a passage. The verbal data indicate that a majority of grade 4 children have such basic knowledge (data for items 4 and 6). Second, a child must keep in mind what he/she is looking for while looking swiftly over the page and evaluate the answer when it is found (Spache & Spache, 1977). The present study shows that grade 4 children have such skills necessary for performing these skimming strategies, as all of the grade 4 children correctly underlined task-relevant sentences under all of the search conditions. In addition, these children located a specific piece of information as quickly as the grade 8 children when they were explicitly instructed to skim for key words. It appears, then, that many children will acquire the basic knowledge and cognitive skills investigated here by the time they finish grade 4.

There are some aspects of knowledge about skimming that show developmental changes. Researchers of cognitive development frequently have pointed out that children acquire knowledge about learning materials and skills, but only at a later point of development do they become aware they can make use of such previously acquired knowledge to solve new or different problems (e.g., Brown, 1975; Flavell, 1970). In an analogous manner, we have found in the verbal data that as many grade 4 as grade 8 children were aware that the target information for "How cold is it in Vancouver?" was related in some way to a degree symbol

and a numerical figure. However, only half of the grade 4 but all of the grade 8 children were able to think that they could facilitate the process of information search by using their knowledge about how information may be expressed (see Table 3). A similar pattern was observed in the data regarding the use of a paragraph structure (items 3 and 4). These findings suggest that children between grades 4 and 8 gradually become more sensitive to parameters affecting the process of information search in a written passage, forming knowledge about how to skim.

An examination of both the verbal and behavioural data suggest that there is something else that may develop between grades 4 and 8. According to the verbal data, approximately one-half of the grade 4 children could describe skimming techniques explicitly (data for items 1 and 5). The behavioural data indicate, however, that only a small proportion of these knowledgeable children actually used such strategies when they were asked to find a single fact in a passage. This observed discrepancy between the verbal and behavioural data suggests that there were children at the grade 4 level who had the knowledge about how to skim, but were not sensitive to an implicit task demand to modify their reading strategies. In contrast, the grade 8 children not only articulated how to use skimming strategies (verbal data), but also spontaneously used the knowledge according to the requirements of the task. These data suggest that part of knowledge about skimming consists of knowing when one should deliberately use the knowledge of how to skim, which many grade 4 children may have to acquire.

We have seen in the preceding paragraphs three sets of data showing different patterns of age-related changes in children's performance. It can be seen that tasks corresponding to those data require different degrees of information integration. In relation to the question posed at the beginning of this section, these three sets of data converge to suggest that the development of knowledge about skimming is an increasing integration of various pieces of knowledge concerning, for example, learning materials, means-end relationships, and implications of specific task demands.

Finally, the grade 8 children displayed mature performance throughout the present experimental session. It should not be concluded from these findings, however, that the development of knowledge about skimming and the use of that knowledge for information search is completed by the time children reach this grade. As already mentioned, to skim effectively presupposes that children know what is being sought. Whether or not students are able to determine the kind of information they are looking for depends partly on the nature of the retrieval questions and the reading materials. For example, children who are able to decide the kind of information needed to answer the questions used in this study ("How cold is it in Vancouver?") may not necessarily be able to do the same for such questions as: "Why is Samuel de Champlain often called 'the Father of Canada'?" From among a virtually infinite number of situations requiring locational skills, only two instances of locating by skimming were examined here

using grade 4 level reading materials. While attempts were made to test the lower limits of children's knowledge about skimming, attempts need to be made in the future to test the upper limits of such knowledge in older children.

Notes

1. The reading program of this particular school is similar to that practised at other schools in the Essex County School System of Ontario. Teachers use materials related to the Nelson Language Development Reading Program. At grade 6 and higher levels, this program is, to some extent, supplemented by SRA (Science Research Associates) studybooks. At the time this research was conducted, a lesson plan specifically intended to teach "when" and "how" to skim and the utility of such techniques was not part of the grade 4 teachers' curriculum. When grade 4 children use skimming, they do so primarily as responses to teachers' incidental instructions. For example, having noticed that the work period would end soon, a grade 4 teacher said, "You are looking for the names of people. Try to look for capital letters." Grade 4 children's knowledge about skimming obtained in this study, therefore, probably reflects what they incidentally learned through classroom activities or what they constructed for the first time while responding to our interview questions.
2. All Chi-squares obtained from four-fold contingency tables (e.g., grade 4 vs. grade 8 x skim vs. others) are Yates-corrected.

The paper is based on the second author's M.A. thesis. The research was supported in part by Canada Council Grant S76-0573 to the first author. The authors wish to thank G. Ann Foster for her valuable suggestions for conducting this study and the teachers and children of the Essex County Separate School System for their fine cooperation.

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Alberta Journal of Educational Research *Vol. XXVI, No. 3, September, 1980*

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Changes in Performance of Children's Handwriting as a Result of Varying Contingency Conditions

Verbal praise and privileges administered under varying conditions of contingency and directness were investigated in a normal elementary classroom. Dependent variables were handwriting performance, sociogrammatic responses, task-ranking, comments and complaints. Data were collected in a multiple time-series design using contingent vs. noncontingent and direct vs. implicit reward conditions as the independent variables, and were analyzed by repeated measures analysis of variance using Scheffé contrasts as a post hoc method of isolating effects. Contingent rewards were more effective as reinforcers than noncontingent rewards, but implicit rewards possessed aversive qualities. Other dependent variable data were nonsignificant. This variability of rewards as reinforcers of handwriting supports suggestions made by Bandura (1969), Premack (1965), and Skinner (1938) regarding the situational nature of reinforcers.

Bandura (1969) summarized the three essential factors of successful reinforcement procedures: (1) a reinforcer should be powerful enough to maintain

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responsiveness over time; (2) there must be a contingency between the reinforcing events and the desired responses; and (3) a reliable method of eliciting the desired response is necessary. Bandura further argued that reinforcement is *relational* rather than an *absolute* property of the consequence used. A particular response event may have lowered reinforcing potency in relation to a more highly preferred activity. Thus, rewards gain reinforcement qualities in a *situational* manner (see Premack, 1965). With reference to school based situations, it may be that a stimulus which has reinforcing properties for some children may not possess reinforcing properties for all children in a chosen class.

In a group situation (e.g., a classroom), rewarding a subgroup for a particular activity would (according to vicarious reinforcement principles) result in an increase of that activity for those subjects who were rewarded, and also for those who observed their peers receive the reward and who judged that they (the observers) would later receive that reward for performing the particular activity themselves. However, Equity theorists (e.g., Adams, 1965; Adams & Freedman, 1976) would predict that those not receiving the reward would not perform while those receiving would claim that the situation was not fair.

When examined carefully, it appears that the vicarious reinforcement situation is dramatically altered in the normal classroom. In the typical subgroup reward situation in normal classrooms, all the members of the class are performing the designated task-activity, but only some of them receive rewards for performance. Bandura (1971) terms this "implicit reinforcement," and notes that

> When the same deserving performances are praised in one case and ignored in the other, the slighted person is not only exposed to observed outcomes, but he experiences immediate direct consequences to his own behaviour, which can have rewarding, punishing, or extinctive effects. (p. 234)

The lack of previous research regarding this issue has been highlighted by Bandura (1979) who has claimed that the "social interdependence of reinforcement effects is an important phenomenon that surprisingly has received no attention."

The present study was designed to examine the effects of changing the contingency conditions of a reward to determine whether this led to changes in subject-response. Specifically, contingent vs. noncontingent and direct vs. implicit reward conditions were implemented as independent variables. Handwriting was chosen as the principal dependent variable because its sensitivity to transient motivational states of subjects should reflect changes in subjects' reactions to altered incentive conditions (Birge, 1954; Eysenck, 1948; Flunckiger, Tripp & Weinbeck, 1961). Sociogrammatic measurements were taken to detect changes in peer/target-subject social interactions. Task-ranking procedures have been used to measure the changes in subject-evaluation of an academic task (Foreman, 1974), and this was included as a dependent variable. Finally, a record of subjects' comments and complaints was kept by teachers to determine subjects' reactions to changing contingency conditions.

Method

Subjects

Subjects were 22 fifth grade girls (C.A. $\overline{X}$ = 10.5) and 22 girls and 12 boys from a fourth grade (C.A. $\overline{X}$ = 9.7) from a private school in a large metropolitan city (Brisbane in Australia). Teachers were not aware of the actual nature of the study and were told that several sentences were being trialled for measuring handwriting.

Design

A multiple reversal and time-series design was used (see Figure 1) as a method of avoiding sources of variability in subjects' performances which were extraneous to the experimental variables (Campbell & Stanley, 1966). The descriptive system used represents Baseline, or nil intervention phases by "A"; intervention is represented by "B"; when intervention varies subscript numerals depict this, e.g., AB_1AB_2A. The use of repeated measurements of each subject's responses over multiple interventions overcomes the problem of spuriously high levels of variability which is often encountered in experimental work in the behavioural sciences by using each subject as its own control (Winer, 1971). The use of repeated measurements of the chosen task-activity, plus the matching of the two classes over differing time periods contribute strongly to the validity of the study by reducing effects due to history, maturation, testing and selection. Randomization (after matching) of subjects into groups adds to the reliability of data by overcoming invalidity due to selection and statistical regression. The implementation of baseline phases before, between, and after intervention phases helps to overcome invalidity due to history, maturation and testing. There were no drop-outs from any subject-group, thus avoiding possible invalidity due to mortality, and the method of measurement remained constant throughout (reliability procedures are explained below), thus overcoming invalidity due to instrumental changes.

		Weeks																									
		1	2	3	4	5	6	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	24	27	28
Class I	Gp. 1a	A	B_1	A	B_2	A		B_3	B_3				B_3	B_3	B_4	B_3	B_3	A							
	Gp. 1b	A	B_2	A	B_1	A		B_3	B_3		Vacation		B_3	B_4	B_3	B_3	B_3	A							
Class II	Gp. 2a												A	B_1	A	B_2	A	B_3	B_3	B_3	B_4	B_3	B_3	A		
	Gp. 2b												A	B_2	A	B_1	A	B_3	B_3	B_4	B_3	B_3	B_3	A		

Key

A = Baseline

B_1 = Direct noncontingent rewards

B_2 = Implicit noncontingent rewards

B_3 = Direct contingent rewards

B_4 = Implicit contingent rewards

Figure 1. Total intervention conditions.

Procedure

Subjects were tested for handwriting performance prior to the study, and were matched according to this in pairs and then randomly split into two groups of equal ability for each class. Each day during the study, every member of the class receiving the treatment performed the task activity during a normal classroom period between 9.00 a.m. and 10.30 a.m. All subjects were required to perform the task on a provided piece of appropriately lined paper approximately 8 x 21 cm, and write their names on the reverse side of the paper. The teacher then collected all subjects' papers while giving the appropriate intervention-phase response. Daily recording of subjects' comments and complaints was carried out by the teacher. Sociogrammatic and task-rank measurements were carried out during the baseline periods and during each contingent reward period.

Dependent variables

1. *Handwriting* was evaluated each day by two measures:

(a) a count of the number of letters written correctly according to the standard and style set down in the Queensland Department of Education Syllabus for Schools, Language Arts (the syllabus from which the children had been taught). Each letter was scored *only* on its *first* occurrence in the daily sentence for the particular day in question. These five sentences each contained every letter of the alphabet in lower case script at least once. Capitals were not assessed. The content of these sentences was devised by a panel of three teachers experienced with grade 4 and 5 children, to ensure that the levels of grammatic, spelling, and cognitive content were appropriate. The particular sentence for each day was presented to the class in the manner usual for writing exercises in that class.

(b) a count of the number of errors in presentation. Errors were scored according to the following criteria: words added/omitted; letters added/omitted; misspelling; punctuation errors.

2. *Sociogrammatic status* was measured weekly with the exception of weeks 2 and 4 for Class 1, and 18 and 19 for Class 2 by asking each subject to complete a form which asked whom the subject would *most* like to sit next to, and whom the subject would *least* like to sit next to. Subjects' own names were written on the bottom of the form. Acceptances and rejections were totalled for each group as a measure of group popularity. This measure was based on Cronbach's (1970) suggestions for measuring sociogrammatic status.

3. *Task-ranking* was evaluated at the same time as sociogrammatic status by the rank which each child awarded each of the curricular-areas (including the task activity) on a voting sheet as a measure of the evaluation of that activity (after Foreman, 1974). Each subject voted for the total of nine curricular-areas on a scale where 1 represented the most-liked choice and 9 represented the least-liked choice. The status of handwriting was calculated by subtracting the

actual vote preference given by a child from the total number of choices available and using the answer obtained as that child's vote. Totals for groups were then calculated.

4. *Comments and complaints* were measured by the teacher entering a record of unsolicited comments and complaints each day onto a daily score sheet. Where possible, note was made of the actual wording of the comment and/or complaint. Totals were calculated across groups. Teachers were requested to score as a complaint any verbalization which was of a derogatory nature concerning the task-exercise, the teacher, the rest of the class, or the reward-structure. Verbalization of a nonderogatory nature was to be recorded as a comment. Both comments and complaints were recorded at any time during the entire school day.

Independent variables

Verbal approval and tangible rewards were given to the individual subjects of the target group in the form of the teacher's comment: "That's good writing, X (subject's name). Take a house-point."[1] The alternative subject-group received no approval or points, the teacher's only comment to them being "Thank you" as the daily response sheets were collected. Details of these procedures are described below. The choice of the reward of teacher approval and house-points was based on the previous successful use of these rewards in these classes to reinforce mathematics skills activities. Used within an AB design over 12 daily trials (baseline = 6 days, rewards = 6 days), these rewards effectively reinforced mental arithmetic problem-solving ($\bar{X}_A = 7.66$, $\bar{X}_B = 15.16$, $t = 5.13$, df = 10, $p < .01$.

Experimental phases

(a) *Noncontingent reward:*

Baseline 1. Handwriting behaviour was recorded for each subject for five days with the teacher's only comment being "Thank you" as the separate pieces of writing paper were collected. Any questions were politely answered in a noncommittal fashion by the teacher.

Intervention 1 (Noncontingent rewards to groups 1a/2a). During this phase the teacher responded to group 1a/2a subjects individually by picking up each subject's writing sheet, scanning it for approximately three seconds, and saying the standard reward sentences mentioned above. For group 1b/2b, the teacher picked up each subject's writing sheet, scanned it for approximately three seconds and said "Thank you." The teacher kept all writing sheets.

Baseline 2. Conditions during this phase were as in Baseline 1.

Intervention 2 (Noncontingent rewards to groups 1b/2b). During this phase, the conditions of Intervention 1 were enacted, but with the groups reversed. That is, group 1b/2b received the reward regardless of performance, and group 1a/2a received no reward.

Baseline 3. Conditions during this phase were as in Baseline 1.

(b) *Contingent reward:*

Intervention 3 (Direct rewards to groups 1a + 1b/2a + 2b). On the first day of this phase, each teacher told her class that she wanted them to try the writing exercises again, and re-presented the daily sentences as before. Upon completion of each day's task, the teacher said: "I don't have time to correct these now, but I'll give them back to you tomorrow with the results on them, "

and then collected each subject's task-sheet, saying only "Thank you" as she did so. The next day, immedately prior to asking the children to write the daily sentence on their sheets, the teacher returned each subject's sheet from the previous day with the subject's score of letters correct written on it. The teacher explained that if the subject had improved over the previous day's performance, there would also be a "plus" on the sheet; if the score was equal to that of the previous day, there would be an "equals" sign; if less than on the previous day, there would be a "minus" sign on the sheet. The teacher handed out each subject's sheet individually and commented to those who had scored a plus: "That's good writing, X. Take a house-point." Perfect scores (26/26) were always awarded a plus and the reward. These sheets were collected after a few minutes' discussion, and the teacher then instructed the class to complete the day's exercise which she then collected.

Intervention 4 (Direct rewards to groups 1a/2a: Implicit rewards to groups 1b/2b). During this phase, the teacher rewarded only groups 1a/2a, contingent on their results as in Intervention 3. Group 1b/2b were not rewarded, but the teacher explained: "I've only got time to correct some of your writing for a few nights because I'm so busy, but I want you all to do as well as you can. I don't know which ones I'll choose to correct each night, so you all had better try hard." Only group 1a/2a had their previous day's task sheets returned the next day, even though *all* subjects were given to expect that they might be the ones to receive the reward on any day.

Intervention 5 (Direct rewards to groups 1b + 2b: Implicit rewards to groups 1a and 2a). During this phase, Intervention 4 was replicated with groups 1b and 2b receiving the reward.

Intervention 6 (Contingent rewards to groups 1a + 1b/2a + 2b). This was a return to Intervention 3 conditions.

Baseline 4. This was a return to Baseline 1 conditions.

Reliability measures

Hall (1970) suggests that direct measurement of data which may be re-assessed at any time has the advantages of precision and permanency over many observer-recorded forms of data. Daily measures were collected of each subject's performance on prepared slips of paper and retained for later cross-checking and re-sorting.

The correction of the daily activity-task was carried out each day after school hours by the researcher with an independent evaluation on at least one day of each week. All corrections were performed by qualified teachers experienced at the grade 4 and 5 level. The independent evaluation was "blind," i.e., previous subject scores and the reseacher's evaluation were unknown. The independent evaluator was also ignorant of the intervention procedures and the groups to which subjects belonged. The choice of which day was to be the checking day was performed by a third party on a random-choice basis. There was no feedback to either the researcher or the independent evaluator as to the respective scoring during the study. Inter-rater reliability was calculated and data appear below.

At the end of the study the researcher performed a posttest rescoring on one day's activities from each of the preceding weeks. Conditions regarding reliability were as for inter-rater evaluation procedures. Correlations for both inter-rater and posttest rescoring reliability were calculated by use of Pearson's Product Moment Correlation.

Results

Reliability

Reliability checks were conducted on days 3, 7, 8, 13, 18, 19, 23, 56, 58, 63, 79, 82, 96, 94, 98, 102 for groups 1a and 1b, and on days 84, 87, 91, 100, 103, 109, 111, 118, 124, 130, 134, 136 for groups 2a and 2b by inter-evaluator methods. Post-checks were conducted for groups 1a and 1b on days 3, 8, 13, 18, 23, 58, 63, 78, 83, 88, 94, 100, 103, and on days 83, 89, 94, 99, 104, 109, 114, 119, 121, 126, 134, 136 for groups 2a and 2b. Inter-rater reliability ranged from .94 to .99 (1a and 1b) and from .98 to .99 (2a and 2b).

Data from the Study

The total data collected during the 29 weeks of the study are shown in Figure 2, from which a lack of apparent change in the levels of target-activity response during weeks 1 to 5 (groups 1a and 1b) and weeks 17 to 21 (groups 2a and 2b) is evident. Marked variations in response levels for the target-activity *do* appear in the weeks following this initial noncontingent phase in all groups. It would appear that response levels for the target-activity rose when rewards were direct and contingent for both groups, but fell at all other phases. Statistical analysis of this apparent change in response level is discussed below.

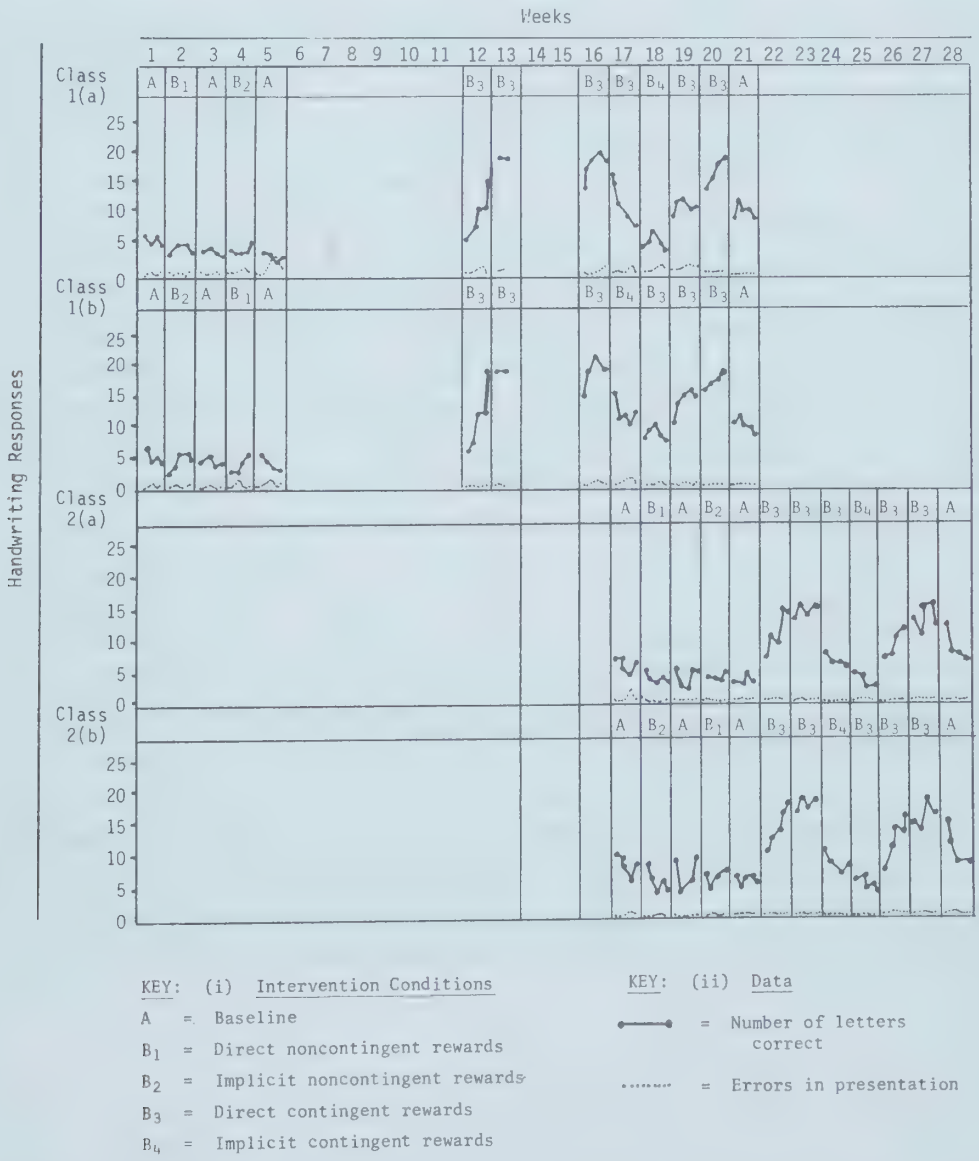

Figure 2. Number of letters correct and errors in presentation for all groups.

The use of teacher-praise and house-points as contingent rewards proved effective in changing handwriting behaviour with the present sample of children. Change in response on the dependent variables of letter correct over interventions ($F_{1a}+_{1b}$ (12,240) = 155.4, $p < .01$; $F_{2a}+_{2b}$ (11,352) = 135.0, $p < .01$) points to a significant change in response when the independent variable of contingency was altered.

"Between subjects" effects were not significant. That is, within each class, both groups reacted similarly to intervention.

Data collected on the rate of errors in presentation indicate a significant difference over interventions for all groups ($F_{1a}+_{1b}$ (12,240) = 8.10, $p < .01$; $F_{2a}+_{2b}$ (11,352) = 4.12, $p < .01$).

Subject-rank responses and comments and complaints remained virtually unchanged during the study, but sociogram responses fluctuated, though in no readily apparent order. Statistical analyses of these variables revealed that none of them was significant.

Contingent vs. Noncontingent Rewards

(a) *Letters correct.* The hypothesized relationship between contingent and noncontingent reward conditions was verified by Scheffé contrasts on the data (contrasts 1a vs. 1b = 18.35, $p < .01$, 2a vs. 2b = 15.89, $p < .01$), indicating that contingent rewards were more effective in producing correct handwriting behaviour than noncontingent rewards, for all groups.

(b) *Errors in presentation.* Scheffé contrasts revealed that conflicting results were found for the two classes (contrast 1a vs. 1b. = 2.42, n.s.; 2a vs. 2b =-3.57, $p< .01$). Class II (groups 2a and 2b) data supported the findings that errors were more common when rewards were noncontingent upon performance. Data from Class I (groups 1a and 1b) gave no support to any part of the earlier results with regard to errors in presentation. The apparently contradictory nature of these data may be partly accounted for by reference to the numbers of errors recorded for each group, which shows that the actual occurrence of errors was very low over all phases of the study (range -.16 to 1.44).

Direct vs. Implicit Rewards

(a) *Letters correct.* Concerning direct vs. implicit rewards, Scheffé contrasts showed that direct contingent rewards produced significantly higher levels of correct handwriting responses than implicit contingent rewards (contrast 1a vs. 1b = 10.38, $p< .01$; 2a vs. 2b = 18.28, $p < .01$).

From Figure 2 it is seen that, during weeks 17 (1a + 1b) and 24 (2a + 2b), one group in each class received direct rewards as it had during the previous two (2a) or three (1a) weeks of intervention, whilst the other group in each class (1b, 2b) received implicit rewards. Both groups in each class declined equally during this week [Class I: 1a $\bar{X}_1$ = 18.37; $\bar{X}_2$ = 11.61; 1b $\bar{X}_1$ = 19.02; $\bar{X}_2$ = 12.56. Class

II: 2a $\overline{X}_1 = 14.59$; $\overline{X}_2 = 7.82$; 2b $\overline{X}_1 = 17.58$, $\overline{X}_2 = 9.29$. $F_{1a}+_{1b} = .43$ (1,20), n.s.; $F_{2a}+_{2b} = 1.87$, (1,32), n.s.]. Similarly, during weeks 18 (1a + 1b) and 25 (2a + 2b), the alternative group (1b, 2b) received direct rewards as it had prior to the week immediately previous, whilst the other group (1a, 2a) received implicit rewards. Both groups again declined equally as during the previous week [Class I: 1a $\overline{X}_1 = 11.61$, $\overline{X}_2 = 5.60$; 1b $\overline{X}_1 = 12.56$; $\overline{X}_2 = 8.84$. Class II: 2a $\overline{X}_1 = 7.82$, $\overline{X}_2 = 4.12$; 2b $\overline{X}_1 = 9.29$, $\overline{X}_2 = 5.36$]. There were some individual scores at variance to these group scores, but only 5 out of 56 subjects responded differently to the group norm. In itself this overall conformity in terms of responses argues for the presence of powerful treatment effects.

(b) *Errors in presentation.* Data collected on the rate of errors in presentation revealed conflicting results once again for the two classes (1a vs. 1b = 3.21, $p < .01$; 2a vs. 2b = -2.31, n.s.). As mentioned above, the apparent contradictory and inconclusive nature of these results regarding errors in presentation may be due to the actual occurrence of errors being very low over all phases of the study.

Discussion

The data from the study have supported the previous literature in relation to the issue of contingent vs. noncontingent rewards. Verbal praise and house-points proved effective reinforcers of correct handwriting responses in two normal elementary school classrooms. Noncontingent rewards were ineffective as reinforcers of the same task activity.

With regard to the issue of direct vs. implicit rewards, data from this study demonstrated that, when implicit rewards were applied to *one* group, the performance of that group declined. However, the performance of the peer group *also* declined during this phase, although it received (hitherto reinforcing) direct rewards. Following this, direct application to both groups reproduced earlier reinforcing effects on all subjects. It requires some explanation that this reward could: (1) be chosen because of its effectiveness as a reinforcer in a similar situation (arithmetic skills, general classroom behaviour); (2) prove to be an effective positive reinforcer on the performance of a chosen academic-skills task (handwriting); (3) be shown to possess aversive properties when used as an implicit reward; and then (4) be once more an effective reinforcer for the same academic-skills task.

It may be the *observation* of the presence of implicit rewards by both those subjects who are receiving them (and also by those subjects who are receiving direct rewards) which is responsible for the alteration in reward as reinforcer effectiveness. That is, rather than the actual reward itself, the *perceived* nature of the reward condition appears to be vital, with some kind of cognitive evaluation of the reward conditions by the subjects. This evaluation of reward conditions was followed by a controlled change in task-response by the subjects. The reward may have lost its reinforcement effectiveness and gained an aversive

effect as subjects perceived inequalities in the application of the reward. That is, "unfair" reward conditions may have been observed by the subjects and a consequential lowering of reward-value followed. As the value of the reward was lowered by the subjects, so their performance deteriorated.

Bandura (1969) suggested the effect of "central processes in behavioral inhibition" (p. 304) to account for the phenomena of vicarious punishment. The performance decrement displayed by all subjects in the present study suggests these processes as a variable which needs to be considered in the construction of response-reward learning situations. Skinner (1950) argued that subject-evaluation of the reward is at least partially responsible for the effectiveness of the reward as a reinforcer. Premack's (1965) claim that rewards gain reinforcement qualities in a *situational* manner appears to be verified. As summarized by Bandura (1969)

> Reinforcement is a *relational* rather than an *absolute* property of the activity. A particular response event will have no reinforcing potency in relation to a more highly preferred activity. (p. 222)

In the present study, the response event of verbal praise plus house/class points lost its reinforcing potency in relation to the more highly preferred activity of *being fair* to one's classroom peers. Subject withdrawal from the task activity of handwriting may be seen as a means of restoring this fairness.

Conclusion

The present study demonstrated that contingent rewards were more effective as reinforcers than were noncontingent rewards in changing the handwriting behaviour of normal primary school children. The effectiveness of direct contingent rewards for changing this behaviour was also clearly demonstrated. The aversive effects of implicit contingent rewards were unexpected, and constitute a major finding herein. The actual nature of subjects' cognitive processes as regards their evaluation of implicit reward conditions was not clarified by the data obtained from sociogrammatic and task-evaluation measure. Further research is necessary to elucidate this issue.

The present study has replicated and verified earlier research which demonstrated the ineffectiveness of noncontingent rewards. Teachers (or school psychologists, counselors, etc.) who do not evaluate and feedback results of set tasks to pupils run the risk of aversive outcomes. Secondly, the use of operant techniques with a subgroup of a class (e.g., slow learners, hyperactive children, behaviour-problem children) to reward a behaviour which is being performed by the rest of the class, may have detrimental effects upon the level of that behaviour as performed by the *whole* class.

Notes

1. Each child in the school was allocated to one "House" on the basis of intramural groupings. House-points were totalled at the end of each school term and the winning house members awarded special privileges of their choice.

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PERSPECTIVES

Educational Consultation: A Summary of Four Alberta Studies

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The provision of consultative assistance is one of the five generally recognized functions of supervision, along with staffing, motivating, developing programs, and evaluating. However, as compared with these other four functions, the consultative function has received surprisingly little attention in research literature. Educational consultation, being a multi-faceted activity, can involve complex interactions between the consulter and the consulted. Blocher (1975),

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while emphasizing an empirical approach to consultative practices, outlines the complexity of the consultant's role:

> If there is any area of general agreement in the literature on consultation, it is that consultants must proceed in careful, planned ways to generate data upon which to base strategies and decisions. They must attend to complex personal and social dynamics, and use knowledge about individual, group and organizational change processes in helping client systems to manage stresses, make decisions, and solve problems in effective and humane ways. (p. 171)

Such complexity has been partly responsible for a feeling of concern among some professors and school district supervisors. One stated purpose of consultation is the improvement of instruction—the frequent lack of improvement following consultative interaction has reinforced this feeling of concern. To some extent this lack of improvement may result from inadequate knowledge of the consultative process which occurs in schools.

Traditionally, this process has been viewed as one in which an "expert" assesses the level of competence of a teacher and suggests behaviours which could lead to improvement. This expert is usually a person occupying a formally designated position such as a coordinator or consultant (mainly "staff" positions) as compared with a principal or assistant superintendent or director (mainly "line" positions). Involvement of a staff officer, who is essentially a giver of advice, should lead to interaction with teachers and exchange of information in a predominantly neutral, helpful and non-threatening setting. The formal line evaluator position carries the explicit responsibility of evaluation of the supervised teacher. Partly because of perceptions held by both parties, no supervisor, whether staff or line, can completely remove evaluation from the provision of assistance to a teacher. Such supervisory evaluations about a subordinate, whether intentional or unintentional, formative or summative, may precede and/or follow any interaction. From the teacher's standpoint, such evaluations are potentially negative, especially where the supervisor determines the teacher's need for consultative assistance.

A different way of viewing the consultative process is to consider it as one *initiated by a teacher* who identifies an aspect which causes sufficient concern to generate the asking for advice. In this context, the "consultant" is anyone who interacts with classroom teachers for the purpose of providing consultative assistance in response to teacher requests for advice or help in relation to perceived educational concerns and problems. That is, the classification of consultant is not confined to formally designated supervisory personnel. The underlying premise of person-centred supervision is that each individual is capable of growth and desires to mature professionally. This positive supervisory stance and optimism about personal motivation and desire for growth are expressed in McGregor's "Theory Y" (Hicks & Gullet, 1975).

This second view was the one used in the four studies described in this article. One of the authors who supervised all four studies (Holdaway) assumed that changes in behaviour of teachers are more likely to result when the need is

recognized by teachers, although this assumption was not tested. This does not deny that supervisory personnel can identify certain behaviours which should be altered in order to improve the quality of instruction.

These four studies were conducted by staff and students of the Department of Educational Administration at The University of Alberta in the 1970's. The objectives were to gain information about the consultative needs and practices of teachers at different grade levels in Alberta, and to make relevant recommendations for research and practice.

Relevant Literature

Many textbooks and periodicals concerned with educational supervision have treated the topic at considerable length, especially from the perspective of experts providing assistance to teachers based on the experts' assessments. Less literature is available on the matter of peer consultation.

One example of advocacy of peer consultation is provided by Parsons (1971), who reached this conclusion on the basis of his experience and research:

> In view of the effectiveness of "other teachers" in helping staff members, it is recommended that greater opportunities be provided for teacher interaction in school systems by restructuring of teacher roles. Teachers should be given greater freedom from "in-class" responsibilities to share new ideas and techniques with their colleagues. (p. 8)

Blumberg (1974) adds weight to Parsons' recommendation in stating:

> [There is] a growing emphasis on teachers serving as supervisory-helping agents for one another in a systematic fashion. Teachers have long given help to their colleagues in an informal manner. The difference now is that peer-oriented supervisory structures are being built into the formal system. (p. 151)

In similar vein, Alfonso (1977, pp. 594-601) considers that a new sense of teacher responsibility is imminent when they voluntarily exchange aid and advice with their colleagues in the interests of improved personal instruction. He believes that peer supervision has the potential to bridge the gap between existing sporadic superordinate supervisory efforts and the improvement of classroom teaching. The twin aspects of effectiveness and efficiency of peer supervision are dealt with by Sergiovanni (1975) who, in summing up much of the recent writing on supervision, states:

> Supervision is a neglected art in need of revival. . . . Improvements in education will increasingly depend upon more fully using and improving the human resources presently available to schools rather than upon introducing substantial new human, material, and economic resources. (p. 1)

Lippitt and Lippitt (1978, p. ix) present the same "the function of consultation is *part* of the role and function of all those who lead, direct, teach or interact as friends or peers with others." They further comment (Lippitt & Lippitt, 1978, p. 1) that "the role of a growing number of persons in our society is labeled *consultant* to describe their helping functions."

Because of the breadth of possible interactions which can legitimately be classified as consultation, ranging from formal supervision to spontaneous

advice-giving, the confining of consultation to holders of particular positions is difficult. In addition, difficulty can be experienced in endeavouring to determine whether a consultative interaction is formal or informal.

Increased recognition and use of peer consultation is also justified because consultation, regardless of the work setting, is firmly based on the *helping relationship*. Rogers (1961, pp. 39-40), one of the early writers in this field, describes the helping relationship as one "in which at least one of the parties has the intent of promoting the growth, development, maturity, improved functioning, [and] improved coping with life of the other." Brammer (1977), in focussing more specifically upon the roles of both the "helper" and the"helpee," as well as upon the intended goals of the interaction, states:

> Broadly speaking, "helping" means assisting other persons to reach goals that are important to them. In the context of the specialist helper, it means facilitating personal growth in the direction chosen by the person being helped, as well as toward the helper's own model of an effective person. "Meeting the other's needs" is a common descriptive phrase, but the real goal of all helping is self-help, which means teaching people to meet needs through their own efforts. (p. 303)

Carkhuff (1969a and 1969b) adds that people continually discuss their problems, large and small, significant and trivial, with colleagues and peers, friends and acquaintances, and superordinates and subordinates. The choice of helper and mode of interaction is generally determined by the nature of the need or problem, for while there is a recognized need for specialists trained to cope with the more complex and extreme manifestations of human behaviour, many personal needs can and are met through informal, nonprofessional interpersonal interactions with nonspecialist lay personnel. Carkhuff (1971) suggests further that many helping relationships involve helpees who are functioning normally by societal standards, but who seek advice or help on everyday, commonplace problems to increase or improve personal effectiveness and/or satisfaction.

However, from an empirically based standpoint, Kolb and Boyatzis (1974) conclude:

> The model of the help is unfortunately not a precise set of mathematical interrelationships among operationally defined variables, but rather is a preliminary attempt to translate case observations and findings from studies of helping relationships in education, welfare, assistance and therapy programs into a single theoretical framework which will eventually allow operational definitions of variables and tests of interrelationships. (p. 371)

Carkhuff and Berenson (1967, p. 174) add that persons in need of help are often unable to find facilitative helpers appropriate to their level of functioning in their immediate environments. In applying this same concern to the potential effectiveness of supervisory assistance to teachers, Blumberg (1974) considers that:

> However, there is a possibility that supervisors' insights into and skills to deal with interpersonal relations are inadequate for a helping relationship; that, if available at all, the training provided for supervisors by school systems is inadequate; or that supervisors are selected without regard to the behavioral demands of the job. More than likely, it is a combination of all three. (p. 110)

The question of effectiveness is dealt with further by Carkhuff and Berenson (1967, p. 4) who indicate that there is an extensive body of evidence which suggests that helping relationships can be either facilitative or retarding, and can have constructive or deteriorative effects on intellectual as well as psychological indexes. These facilitative or retarding effects can be accounted for by a core of primary dimensions which are shared by all interactive human processes, independent of theoretical orientation. These core dimensions are empathic understanding, positive regard, genuineness, concreteness or specificity of expression, and self-evaluation or self-exploration. Similarly, Rogers (1961, p. 44) noted that the helpee's perception of the helper's attitudes made a significant difference to the effectiveness of the relationship. The degree of trust the helpee feels towards the potential helper will determine the extent to which the helpee is prepared to divulge or share his problem or need with the helper. Nevertheless, the teacher's dilemma is that his needs for help conflict with his needs to be seen as competent: "if I convey my needs for help and feelings of not knowing what to do, it is likely that I will be seen as a weak and marginal teacher" (Blumberg, 1974, p. 144). Formal aspects of roles must not be permitted to interfere with the establishment of a genuine, concrete, empathic, and respectful helping relationship.

The role of the consultant is taken further by Dinkmeyer and Carlson (1973, p. 85) who propose that "The consultant's role is perhaps best characterized as the architect of change." They later defined the consultant's role as a facilitator of human potential. The extent to which a consultant is effective in reaching such goals is seen by Blocher (1975, pp. 159-160) as being dependent upon at least six factors:

1. The method of intervention;
2. The characteristics of the consultant;
3. The characteristics of the consultee;
4. The nature of the concern;
5. The nature of the behaviour change desired; and
6. The nature of the context in which the consultation takes place.

All six of these factors can readily be translated into educational terms. For example, the method of intervention could relate to whether a request for assistance is initiated by a teacher or whether the supervisor identifies a need and without being approached offers opinions concerning desirable changes in behaviour. Personal qualifications, grade level, teaching subject, attainment of competence and perceived power of the consultant to affect a teacher's career relate to one or more of Blocher's six factors.

Methodologies

A preliminary study conducted by Plamondon (1973) obtained data from 135 teachers in five schools in one school district in Alberta. These teachers, whose

responsibilities covered the K-12 range, represented 97 percent of the 141 who received a questionnaire. Plamondon also interviewed four teachers from each of the five schools. The four concerns mentioned most commonly by the respondents were "Obtaining information on background of students," "Assessing the need for remedial programs," "Implementing remedial programs," and "Developing course outlines." For the general area of "Curriculum and program development concerns," respondents favoured department heads as their first consultative choice. For advice in the "Instructional materials" area, other teachers were most frequently mentioned as first choice, while guidance personnel were favoured for assistance with concerns in the "Student measurement and evaluation" and "Meeting specific students needs" areas. However, of more importance than Plamondon's actual results concerning consultative needs and practices was the confirmation that this was a useful area of research which required detailed study. The findings also led to the decision to investigate the consultative needs and practices of teachers in schools categorized by grade level. Consequently, Plamondon's research was an important stimulus for the three major studies described in detail in this article.

Table 1 presents an overview of these three studies. While an obvious similarity exists among their methodologies and instruments, the approach taken by each researcher in relation to the specific detail of data collection was substantially individual, and was predetermined to some extent by the conceptual focus adopted and by experiences of the previous researchers. These subsequent studies sought information from teachers in each of the major grade-level subdivisions. Haughey (1976) collected data from all 80 elementary school teachers (kindergarten-Grade 6) in three schools within the same school district examined by Plamondon. Harrison (1978) obtained information from 209 junior high school teachers (Grades 7-9) out of 358 approached in 16 schools in five Alberta school districts. Millikan (1979) received 112 teachers' usable replies out of 260 approached in three senior high schools (Grades 10-12) within one large school district. Follow-up interviews were conducted with all 80 teachers in the elementary school study, and with 18 teachers in the senior high study. Both the junior high and senior high studies also obtained questionnaire data from central office consultants employed by the school systems; some of these consultants working with senior high teachers were interviewed. Choice of the numbers of school systems, schools, teachers, and consultants was determined by such factors as willingness of school systems and schools to be involved, travel distances, and costs. Differences in the methodologies used in the studies were largely accounted for by these aspects, but also by insights gained from conducting each study.

While all three studies were directly related in subject matter, comparison of the findings was restricted by significant differences in instrumentation. For example, "educational concerns" varied in number, general focus and specific wording, not all studies sought equivalent information on related issues, and different emphases were placed upon interviewing.

TABLE 1

OVERVIEW OF RESEARCH METHODOLOGIES EMPLOYED IN THE STUDIES

Aspect	*K-12 (Plamondon,1973)*	*Elementary (Haughey,1976)*	*Junior High (Harrison,1978)*	*Senior High (Millikan,1979)*
Population studied	5 selected schools in one district	3 selected schools in same school district as provided data for Plamondon	16 schools: 5 selected at random in one school district, all 4 in another district, all 4 in one county, and all 3 in another county.	3 selected schools in one school district
Teacher questionnaire	*3 sections* - demographic - 28 concerns - 7 general issues	*3 sections* - demographic - 21 concerns - social conflict relationships	*6 sections* - demographic - 38 concerns - 3 prime concerns - satisfaction - provision to colleagues - unsought needed assistance	*7 sections* - demographic - 39 concerns - 3 prime concerns - satisfaction - provision to colleagues - unsought needed assistance - 9 general issues
	141 distributed 97% returned (usable)	80 distributed 100% returned	358 distributed 58% returned (usable)	260 distributed 43% returned (usable)
Teacher interviews	20 interviewed	80 interviewed	nil	18 interviewed
Consultant questionnaire	nil	nil	66 distributed 73% returned (usable)	31 distributed 65% returned (usable)
Consultant interviews	nil	nil	nil	7 interviewed

Personnel within the school (such as principal, counselor, and teacher colleague) who provided such assistance were classified as internal consultants, while those from external agencies (such as universities or central or regional offices of education) were described as external consultants. Harrison and Millikan obtained information from both internal and external consultants, but Haughey approached internal personnel only.

The three studies explicitly defined educational consultation as the *teacher-initiated* seeking of assistance and/or advice about education-related concerns. All studies requested teacher respondents to nominate from lists of educational concerns those (1) for which they had either sought assistance and/or advice or (2) for which assistance either was or might be desired during the current school year.

Results

Major Consultative Needs

The six items with the highest percentage frequency response of teachers are presented in Table 2. For the group of 80 elementary teachers, "Diagnosing learning difficulties" was clearly the major concern, being mentioned by 85 percent. A related function, "Developing remedial programs" was the second most commonly mentioned concern (75 percent), followed by "Selecting instructional materials" (73 percent). Of the six highest response items selected by the elementary teachers, two related to the general Counselling/Student Services category, two to Curriculum/Program, one to Instruction/Methodology, and one to Audiovisual.

At the junior high level, three of the six highest response items related to Counselling/Student Services, and one occurred in each of the Instruction/Methodology, Curriculum/Program, and Audiovisual categories. The two most frequently mentioned items were "Obtaining student background information" (76 percent) and "Developing course outlines" (74 percent). Two of the six major senior high concerns were in the Curriculum/Program category, two were in Counselling/Student Services and two in Instruction/Methodology. The most frequently mentioned senior high concern was "Dealing with tardiness and/or absenteeism" which was identified by 83 percent of respondents. However, this concern was not included on the list presented to the elementary and junior high teachers. No reference to remediation occurred among the six highest response items in the junior high and senior high results. Two items appeared in the nine most frequently mentioned concerns for all three grade levels: "Developing course outlines" (55 percent elementary, 74 percent junior high, and 70 percent senior high) and "Selecting instructional materials" (73 percent, 68 percent and 73 percent).

TABLE 2

PERCENTAGE FREQUENCY DISTRIBUTIONS
OF TEACHERS' NEEDS FOR CONSULTATIVE ASSISTANCE
FOR THE SIX HIGHEST RESPONSE ITEMS

Elementary (*N*=80)	%	*Junior High* (*N*=209)	%	*Senior High* (*N*=112)	%
Diagnosing learning difficulties	85[a]	Obtaining student background information	76	Dealing with tardiness and/or absenteeism	83
Developing remedial programs	75	Developing course outlines	74	Planning and/or utilizing evaluation procedures	78
Selecting instructional materials	73	Selecting long-use instructional materials	68	Determining expectations for student achievement	77
Operating audiovisual equipment	64	Diagnosing learning difficulties	66	Determining established school programs/standards	77
Developing course outlines	55	Selecting audiovisual materials	63	Dealing with student personal problems	77
Obtaining student background information	54	Diagnosing individual differences	61	Selecting "best" instructional materials	73

[a] This means that 85 percent of elementary school teachers indicated their need for consultative assistance in the task area "Diagnosing learning difficulties."

Frequency of Need

The frequency with which teachers sought consultative assistance was reported in only the elementary and senior high studies. In the elementary school study, teachers were asked to recall the actual number of their in-school interactions in the September-February period; attention was focussed on the interaction patterns within the three schools. The senior high study sought approximations of the number of occasions of seeking assistance, using the classifications "one to four occasions," "five or more occasions," and "recurring"; the recurring classification applied to requests for assistance which occurred frequently and fairly regularly. The majority of assistance requested by senior high school teachers in relation to all 39 listed concerns was on "one to four occasions" over the current school year.

TABLE 3

PERCENTAGE FREQUENCY DISTRIBUTIONS
OF THE EIGHT MOST FREQUENTLY RECURRING CONCERNS

Elementary *(N=80)*	%	Junior High *(N=209)*	%	Senior High *(N=112)*	%
Developing instructional materials	92[a]	Obtaining student background information	87	Determining expectations for student achievement	73
Developing questioning techniques	91	Motivating students	85	Planning/utilizing evaluation procedures	72
Evaluating lessons/units	91	Diagnosing individual differences	84	Selecting "best" instructional materials	70
Teaching concepts, constructs, generalizations	89	Selecting instructional materials	84	Dealing with student personal problems	70
Developing audiovisual materials	89	Planning behavioral objectives	81	Improving student motivation	65
Developing remedial programs	89	Selecting performance goals/objectives	80	Dealing with tardiness /absenteeism	59
Developing unit /lesson plans	87	Diagnosing learning difficulties	80	Obtaining information on budgeting/money control	53
Developing/using small group activities	86	Solving teacher-teacher conflict	80	Determining course objectives	53

[a] This means that 92% of elementary teachers experienced a recurring need for consultative assistance for the task area "Developing instructional materials."

Information on the recurring concerns of teachers for assistance with particular problems was obtained in all three studies. Table 3 shows data related to the eight most frequently mentioned recurring concerns for each group of teachers. The most frequently mentioned concerns were "Developing instructional materials" (identified by 92 percent of elementary teachers), "Obtaining student background information" (87 percent of junior high teachers), and "Determining expectations for student achievement" (73 percent of senior high teachers). However, many other concerns had percentage frequencies of response very close to these maxima. Concerns related to instructional materials were the third most frequently mentioned by senior high school teachers (70 percent) and fourth most frequently mentioned by junior high school teachers (84 percent). "Obtaining student background information," the most common recurring concern of junior high teachers, was not listed among the eight most common recurring

concerns of elementary or senior high school teachers. "Determining expectations for student achievement," the most common senior high recurring concern, was also prominent on the junior high list, where it was called "Selecting performance goals/objectives" and mentioned by 80 percent. Diagnosis, evaluation, and motivation were also frequently identified as recurring concerns for which consultative assistance was sought.

Consultative Personnel

The consultant classification most frequently mentioned as the source of needed assistance in all three studies was "teacher colleague in the same school," as shown in Table 4. However, some differences in the data collection and reporting procedures for the various studies need explanation. In the junior high study, all in-school personnel, excluding the principal, were grouped under the global classification of teacher colleague, whereas in the other two studies, in-school personnel were differentiated according to formal designations. Further, no percentage frequency distributions of the provision of assistance could be calculated for the elementary school study because of incomplete specific detail.

However, given the above restrictions on direct comparisons of consultative personnel, the following relationships were apparent. When all senior high in-school personnel (excluding the principal) were combined, the significance of the teacher colleagues as the prime source of consultative assistance in both the junior high and senior high studies was apparent, representing 61 percent and 83 percent, respectively. When the assistance provided by the principal was included, in-school consultative personnel accounted for 80 percent of total assistance provided to the junior high teachers and 93 percent to the senior high teachers. No use of external consultative personnel was reported by the elementary teachers.

Related Issues

Satisfaction. The three studies sought data from teachers about their ratings of satisfaction experienced in relation to the consultative assistance provided. The same classifications were used: Very Satisfied, Satisfied, and Not Satisfied or Unsatisfied.

Over 50 percent of the elementary teachers were Very Satisfied with the assistance that they received with respect to these concerns: "Using problem-solving/inquiry/discovery method" (60 percent), "Selecting instructional materials" (56 percent), and "Obtaining student background information" (51 percent). On no concern were over 50 percent of either the junior high or senior high teachers Very Satisfied with the provided assistance. When the Very Satisfied and Satisfied categories of elementary teachers' responses were

TABLE 4

PERCENTAGE FREQUENCY DISTRIBUTIONS
OF THE PERSONNEL MOST FREQUENTLY CONSULTED

Elementary (N=80)	%	*Junior High (N=209)*	%	*Senior High (N=112)*	%
Teacher colleagues	[a]	Teacher colleagues (same school)	61[b]	Teacher colleagues (same school)	31
Guidance counsellor		Principal	19	Department heads	23
Assistant principal		Teachers (other schools)	10	Assistant principals	15
Principal		School district consultants	8	Principal	10
Remedial reading teacher		Provincial Department of Education personnel	1	Counsellors	9
				Librarians	4
Individual grade teachers				School district consultants	3
Librarian				Teachers (other schools)	2
Teachers's aide				Provincial Department of Education personnel	1
				Community personnel	1
			100		100

[a]No percentage frequencies were obtained for the consultative personnel in the elementary school study. The rank ordering is based on data collected in the study (Haughey, 1976).

[b]This means that 61 percent of all mentions of assistance sought by teachers was provided by teachers' colleagues in the same school.

combined, the following concerns received over 90 percent: "Operating audiovisual equipment (100 percent); "Selecting instructional materials," "Obtaining student background information" and "Evaluating lessons/units" (all 97 percent); "Developing course outlines" (96 percent); and "Solving teacher-pupil problems" (91 percent). The highest percentages of elementary teachers unsatisfied with the assistance provided occurred with "Interpreting curriculum guides" (33 percent), "Using problem-solving/inquiry/discovery method" (25 percent), and "Planning individualized instruction" (16 percent).

For junior high teachers, high levels of satisfaction were again obtained for the assistance with several concerns. Some similarities were obtained for both the elementary and junior high levels, e.g., again over 90 percent of the junior high teachers were Very Satisfied or Satisfied with "Obtaining student background information" and "Selecting instructional materials." This level of satisfaction was also obtained for "Diagnosing individual differences" and "Establishing classroom control." Senior high teachers were also Very Satisfied or Satisfied with assistance provided in "Selecting 'best' instructional materials" (100 percent). Over 90 percent of senior high teachers were Satisfied with assistance given for "Determining 'best' techniques for content presentation," "Developing course outlines," and "Obtaining information on budgeting/money control."

The two concerns receiving the highest Unsatisfied responses from junior high teachers related to remedial activities, with 50 percent recording this response for "Creating useful remedial materials" and 25 percent for "Diagnosing learning difficulties." Also receiving high Unsatisfied percentages were "Selecting long-use instructional materials" (24 percent), "Developing course outlines" (21 percent) and "Developing long-use instructional materials" (20 percent). In contrast, the senior high items receiving the greatest proportion of Unsatisfied mentions were largely psychologically based, being "Dealing with tardiness and/or absenteeism" and "Improving student motivation" (both 37 percent). The next most common senior high Unsatisfied responses were obtained for "Determining expectations for student achievement" (27 percent), "Determining teaching time/subject-allocation" (25 percent), and "Determining established school program/standards" (18 percent).

Unsought, needed assistance. Teachers in the three studies were asked to give their reasons for not seeking assistance when they felt that they needed it. Responses related to "lack of time to seek it" were first ranked in two of the studies, and second ranked in one. Senior high school teachers differentiated between the personal reason of "no time to seek it," and the organizational reason of "no time is provided to seek it." The elementary teachers' first ranked reason was "no one to ask or didn't know whom to ask."

Responses relating to time represented 12 percent, 18 percent, and 32 percent of the total reasons given by elementary, junior high, and senior high teachers respectively. Other reasons appropriate to each of the studies appear in Table 5.

TABLE 5

REASONS GIVEN MOST COMMONLY BY TEACHERS FOR NOT SEEKING CONSULTATIVE ASSISTANCE

Elementary *(N=80)*	*f*	Junior High *(N=209)*	*f*	Senior High *(N=112)*	*f*
No one to ask or didn't know	18[a]	Insufficient time	15	Not enough time	7
No time	12	Didn't know where to find information	9	No time set aside for consultation	5
Not high priority /major concern	12	Information not practical/vague		Colleagues/administrators too busy	4
No wish to take up teacher's time	11	Lack of availability of personnel	9	External consultants not available when needed	4
Personal desire	9	Previous experience was negative	8	Never see external consultants	3
No one else teaching program	9	Problem eventually solved itself	8	Teachers know more than consultants	3
Workshop provided answers	5	Availability of personnel and time to consult were incongruent	5		
Discussed generally	4	Red tape	4		

[a] 18 elementary school teachers stated a reason for not seeking desired consultative assistance as being "No one to ask, or didn't know 'whom to ask'."

Provision of assistance to colleagues. Data related to teachers' provision of consultative assistance to their colleagues were obtained for each grade level. All three studies reported provision of assistance to same-school colleagues, while Harrison and Millikan also reported provision of assistance to other-school colleagues.

An average of 36 percent of elementary school teachers across the three schools in the study were named by others as having provided consultative assistance to their same-school colleagues. However, 47 percent of these same teachers reported having personally provided assistance to colleagues in the same school, while 41 percent had done so for colleagues in other schools.

Sixty-two percent of elementary school teachers reported having provided such assistance "at least twice per week," while the majority of senior high school teachers reported having provided help to same-school peers at least "once or twice per year." No frequency of such provision was reported in the junior high study.

Concluding Comments

Detailed comparisons of the findings of the reviewed studies were somewhat restricted because of differences in instrumentation. Further, while similar data were collected, in certain instances the methods of reporting were different, as exemplified in Table 4. Nevertheless, the following generalizations are supported by the findings.

1. A majority of the teacher respondents expressed need for consultative assistance for a majority of the educational concerns listed on the questionnaires.

2. The staff classification most frequently consulted by teachers at all grade levels was "teacher colleagues in the same school."

3. At least half of the listed items were classified by a majority of teacher respondents in schools of the three different grade levels as representing recurring concerns.

4. Teachers in schools of the three different grade levels reported overall satisfaction with the assistance provided, although significant levels of dissatisfaction were reported in relation to different categories of items for teachers of different grade levels.

5. The predominant overall reason why teachers may choose not to seek needed consultative assistance related to a lack of time.

Several differences were noted in the consultative needs and practices of teachers in schools of different grade levels. For example, elementary teachers identified the need for assistance with diagnosis of learning difficulties more frequently than did junior or senior high school teachers, while the reverse applied to developing course outlines. At the senior high school level, teachers identified their need for assistance with student problems and curriculum/program matters to a greater extent than did teachers in schools of the other grade levels. With respect to recurring concerns, the elementary teachers emphasized instruction and methodology, the junior high teachers identified concerns of a psychological nature, and the senior high teachers, while also mentioning psychological concerns, stressed expectations and evaluation. Smaller percentages of teachers had recurring concerns as grade level increased. Elementary teachers saw themselves as providing assistance to their peers more frequently than did the senior high teachers.

Apart from the generation of a great deal of new information, the major contribution of these studies to our understanding of the consultative process in education lies in the support given to the importance of peer consultation as proposed by Parsons, Blumberg, Alfonso, Sergiovanni, and Lippitt and Lippitt. Another important contribution was the empirical support given to the notion that teachers in schools of different grade levels have consultative needs which show some similarities but also several marked differences which require alternative methods of resolution.

Recommendations for Practice

The following list synthesizes the researchers' recommendations based on the questionnaire and interview responses for improvement of the practice of educational consultation and the consequent reduction and/or alleviation of teachers' educational concerns.

1. Greater and more effective use should be made of in-school experts by providing them with more non-teaching time for consultation.

2. More intensive in-school orientation seminars should be conducted by administrators.

3. A more diversified network of specialists and generalist consultants should be established using both full-time and part-time personnel based both in schools and in central/area offices. System-level consultation should emphasize specialist services such as diagnosis of learning difficulties, while in-school consultation should relate more to generalist advice (Haughey, Holdaway & Small, 1977, p. 95). Because of the more specialized nature of the training and experience of teachers in the larger senior high schools, these schools could become more self-sufficient in the provision of consultative assistance for a variety of concerns.

4. The consultant's role should be redefined to include less administrative responsibility.

Findings from the three studies clearly show the existence of teachers' needs for consultative assistance over a comprehensive range of concerns. The potential benefits of educational consultation for both professional growth of teachers and alleviation of their concerns appear to have been underestimated, and the practice underutilized. At a time when supervisory staff numbers are being reduced in many school systems because of declines in student enrolment, we need to know more about the practice and benefits of educational consultation.

Recommendations for Further Research

The studies reviewed in this article presented findings from rather small samples of teachers employed in school districts in the general area of Edmonton. While many of the findings are important and were to some extent predictable, other studies are required in order to obtain conclusions which are more generally applicable.

Two different approaches could be taken in further research activities. First, studies using identical instruments in more geographic areas in Alberta and elsewhere are needed to obtain more data about consultative practices for a much larger number of teachers and consultants. Second, in-depth site studies of the interaction of teachers and those they consult should be conducted. For example, a researcher could with benefit examine these interactions in one school over a period of one academic year. Some of the theoretical perspectives cited above concerning the helping relationship, such as satisfaction of needs, should be included in future studies. Also, more data are required concerning practices in different settings, that is in classrooms, schools, and school systems of different type, size, and location. Such information could be of value to those involved in designing preservice and in-service teacher education programs.

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Alberta Journal of Educational Research *Vol. XXVI, No. 3, September, 1980*

ESSAY REVIEWS

CURRICULUM POLICY MAKING IN ALBERTA— OR ANYWHERE IN CANADA

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CURRICULUM POLICY MAKING IN ALBERTA EDUCATION. *By Max van Manen and Lorne Stewart* (Eds.). Edmonton: Faculty of Education, The University of Alberta, 1978, 299 pp. & Appendix.

Public policy is ultimately grounded in an appreciative setting which, like the unconscious mind of the psychologist, is mysterious but nonetheless real—an often inchoate, subliminal, and infinitely complex matrix of values, motives, interests, attitudes, and belief. Those who would change policy must seek to understand this setting and the book reviewed here is of great interest as a case study of an attempt to alter the appreciative setting of public education in the Canadian province of Alberta.

The book is a response by leaders of the educational profession to a ministerial position paper (the Harder Report) proposing a radical restructuring of the Alberta curriculum. An educational debate is triggered. Professors Berk, Pearson, and MacDonald attack the assumptions, rationality, and logic of the report. The historical, religious, and socioeconomic aspects of curriculum policy

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are instructively analyzed by Professors Carney, Hodysh, Quarter, and Mazurek. The pupil as focus of educational policy receives consideration through articles by Professors Schmidt, Therrien, and Mitchell. The tortured issues of accountability and evaluation are deftly treated by Professors Weiss, MacKay, MacDonald, and Nyberg while, finally, the role of the teacher practitioner receives careful consideration from Professors Brauer and Stewart. Taken together, some 300 pages of illuminating and cogently reasoned responses by professional experts all directed to the end of responding to a political initiative, and in some way altering the appreciative setting which underlies the educational reality.

The classical strategies for the making of policy are really quite limited. At one extreme there is rational comprehensive planning which attempts to apply system analysis and theory in a logically rigorous manner and to maximize utilities according to the best canons of econometric science. It is strong on quantitative methodology; it seeks to allow for all contingencies; and it implies a clinically sterile separation of values from facts and ends from means. The Harder Report, despite its pretensions to a "systems approach," does not fit this mold.

At the other extreme there is what in plain talk is called "muddling through," technically understood as "disjointed incrementalism" (Braybrooke & Lindblom, 1963). That is, the making of small decisions at the margin of organizational developments which intertwine fact and value, which do not commit a system to large or irreversible changes, and which tend to perpetuate the status quo. The Harder Report does not fit here either; its suggested changes, in scope and intent, are too radical.

Between these extreme modes of policy strategy we have the mixed scanning of Etzioni (1968) and the neomobilism of Stufflebeam and his colleagues (1971). But both of these middle ground strategies demand, at the least, certain requirements of tactical heuristics, conceptualization, and structured inquiry which Dr. Harder's report does not seem to satisfy. So again it does not fit. And one is left with the question whether this is an exercise in policy-making at all, despite the assertion of the title. What is going on here? Is it simply the political penchant for the launching of trial balloons? In which case the concentration of flak from the vested interest of academe is devastating—there is nothing left of the balloon and its gas is thoroughly dissipated throughout the atmosphere. Or is it the more cynical political exercise of drawing fire in preparation for an already planned advance? These and other speculations are raised in the pages of the volume, but it does not seem particularly fruitful to linger over them. The thing of interest, the thing of practical value, seems to lie in the serendipity of the occasion for we have here, by happy accident, an almost-textbook of the conventional wisdom on curriculum thinking in contemporary Canada. Dr. Harder of Alberta Education, acting from whatever motivations, has produced a discussion paper for the Curriculum Policies Board of Alberta Education. It is a

second draft (the first, he says, having been "generally well received by the groups to whom it was presented") and it purports, succinctly, to respond to "general dissatisfaction of the public with what they feel are short falls in the education system and the high costs of what they term mediocrity." (Alberta Education and Diploma Requirements, p. *v*). This, it does by a truncated progression from the general (philosophy of education) to the specific (number of minutes of various required components in the curriculum).

Let us be duly considerate. Let us accept for the moment the presumptions of public dissatisfaction in Alberta. Then this document and the 300 pages of variegated response that it generated is of interest because it presents us with a sort of syndrome for frustration. Frustration of the public, of the bureaucracy, of the vested professional interests, of curriculum of policy, of policy-making, of Alberta, of education, indeed of Curriculum Policy Making in Alberta Education. And perhaps of education generally in the developed world. Briefly the syndrome runs like this.

There is necessarily inchoate feeling of dissatisfaction diffused amongst sectors of the public education system. The roots may be historical, cultural, irrational, resistant to analysis. They may be based on facts or chimera; certainly they will be affective and valuational. Some of this diversified and poorly articulated sentiment manifests at the various levels of the political system. Because of its poor articulation, its ambivalences and ambiguities, it lends itself well to political manipulation. It enters into the language games which are played in political-governmental-bureaucratic settings. The dissatisfaction then at some point becomes delicately or firmly crystallized (a Harder discussion paper; a Hall-Dennis Report); it achieves tentative expression. In doing so it permits, for the first time in the syndrome, organized reaction about a focus. First to respond are those with presumptive expertise. Concomitant with them respond the vested interests of the affected profession or professions. Typically there is a barrage of rhetoric, argument, analysis, and counter-analysis which tends simultaneously to overwhelm and undermine the first articulation which served as a trigger. All of this takes time. Energy is spent. Politicians and public may feel that action is occurring and work (in the sense of dissipated energy) is being done. The target system (schools + school bureaucracy) is tinkered with or tuned. More time elapses. Typically no radical or disruptive change occurs. The equilibrium state which generated the first phase of the syndrome is restored (if it was ever disturbed) and the sequence of events can be considered at an end until the historical play of public sentiment on the one hand and political sensors on the other conjoin to initiate another round of action and reaction. The waves wash upon the shore with greater or lesser turbulence and what is left behind is always a flotsam and jetsam of paper.

Yet there is more to policy-making about the curriculum of education than the simplistic syndrome suggested above. The cut and thrust has intended and unintended consequences. The syndrome itself is purposive. As Sir Geoffrey

Vickers (1965) has shown, the whole policy-making process is in effect an effort to alter an appreciative setting. The appreciative setting is the complex of values, attitudes, beliefs, and motivations of the actors in a given scenario. In any comprehensive sense, of course, this complexity is not amenable to rational analysis and manipulation but in practical policy contexts it can be radically simplified because of the emergence of strategic, salient, or focusing issues—value positions about which the contestants in an arena can organize their arguments. This process becomes apparent in authentic democratic election campaigns but is pervasive throughout all policy processes. In the instance under consideration there is contest of "appreciation" between the public acting at many removes through a bureaucratic spokesman and a profession acting at one remove through a series of academic spokesmen. The contest is uneven but the interesting question is to what extent is the appreciative setting altered *after* the exercise. I cannot answer this on behalf of the Alberta bureaucracy and government. I suspect, however, that on the part of the academic establishment the appreciation of the situation is now entrenched; certainly this document provides the ammunition for such fortification, for all the curricular bases are doubly barbed and armoured.

The pattern is very clear in the instance being considered. At ministerial or sub-ministerial behest, a paper is produced. It is responded to in this volume by marshalled expertise within a university. The experts include historians, professors of administration, editors of learned journals, and authorities in elementary education, educational psychology, educational philosophy, and evaluation. Needless to say the trigger paper is damned, blasted, and demolished. The waves recede and the ship of Alberta Education sails on. Nothing exceptional here save that in this one instance, by a fortunate happenstance of editorial skill, assemblage of authors, and right institutional patronage, we have as a lucky product of this sequence a document which in one set of covers makes available for continued critical analysis the conventional wisdom of curriculum *circa* 1978. In a real and useful sense it constitutes a text in curriculum, applied educational philosophy, and educational administration. Because of this quality of coagulated curriculum thought and inquiry, it is worth drawing attention to some of the critical questions raised, points made, and issues vexed.

First, the paradox inherent in educational policy making. It can be shown (van Manen, p. 12, citing Worth) to be a power-based process. The proposed remedy is to compensate by enhanced democratic participation. But this enhances the irrationality and political quality and initiates a sort of vicious circle of which the syndrome described above is a by-product phenomenon. And the logical alternative to this, the rational-comprehensive approach, can then be shown to be either (a) unworkable or (b) ideologically unacceptable.

Much of the criticism of the Harder plan is directed against its connotations of management control, "payment by results," accountability, the "systems" approach, the "management science" sort of thing. One is led again and again to

wonder whether in education there can be any new thing under the sun. The sense of *déja vu* is overpowering. Callahan (1962) recorded this movement for us so clearly in his *Educational Administration and the Cult of Efficiency.* Moreover, as one of the respondents points out, there is something automatically distasteful about a sandwich the meat of which is a quantitative specification of the number of hours to be spent upon "basic life skills" (which translates into little different than what presently obtains) and a series of managerial controls (mastery and competence examinations). This meat then being inserted between the bread of classical Greek idealism (Panathenaicus) as a fore-quotation and some sentiments of the prophet (Kahil Gibran) as an after-quotation. From the qualitative to the qualitative via the quantitative without benefit of visible logical connection.

It is not, of course, that professional educators are resistant to accountability, or deficient in responsibility, or, worse yet, defensive of a claim on the flow of public funds which affords them opportunities for what the labour movement calls "featherbedding. " Nor is it, on the other hand, that educators are necessarily less venal than lawyers, physicians, and bureaucrats. G. B. Shaw was close to the mark when he said that "all professions are conspiracies against the laity." But the distinctive peculiarity of the education profession is its intractibly qualitative character. To apply systems reasoning is therefore especially difficult. It might result in such tacit or explicit propositions as "The throughput of the system is protoplasm." To be sure it is—and the feedback loops are protoplasmic as well, as are the sensors in the political support metasystem which latter are, we presume, what Dr. Harder is most concerned about. Which means that the business of schools (and this subsumes all the managerial details of their curricula) is in the last analysis imponderable, ineffable, not susceptible to management by objectives. To ask about the purpose of schooling—even allowing Harder's distinction between schooling and education—is to ask a question like, What is the purpose of the State? What is the goal of Canada? Of North America? It is *not* like asking, What is the purpose of the medical profession?, of the judiciary?, of the firm? It is to ask something about life chances, about the quality of life, about the metavalues of a given society and culture as it moves through historical time. And this kind of question does not easily yield answers for we are back again into the realm of the inchoate and often the (literally) unspeakable.

Behaviourism is attacked and Harder is accused of this heresy. He is also accused, rightly, of illogic, inaccuracy, inconsistency. And educational engineering. (p. 63). Other accusations follow. Pandering to a nonexistent discontent amongst the clientele: "throwing the public a bone" (p. 17). Really attempting to respond to a problem of growing unemployment (p. 75). A misdirected concern for "quality control" based on a resurgence of the fallacy of a "science of education" (pp. 128, 133). The arguments presented by Professor Quarter are powerful, factual, suggestive, and persuasive enough to affect most appreciative settings.

He suggests a trend towards "puritanical functionalism" which would translate into greater centralized regulation and control (of protoplasmic flow *and* curriculum). Quarter's historical survey of ideological change in education is very valuable and one wonders only whether he has taken into sufficient account the demographic aging of the Canadian population.

The assaults continue and amid the rumble and thunder, the professional position becomes clear. The lines of the academic commitment are as follows: To schooling as *education*, that is, the major not the minor role. To an evaluation of education which is general rather than specific, that is not tied merely to competency based models and quantitative norms (MacDonald, who is British and the only double contributor to the polemic, writes convincingly about accountability, standards, and highly sophisticated modes of school evaluation). To humanism; to child-centredness; to social relevance of the curriculum (e.g., the lack of credibility of qualifications in "Practical Arts," p. 168). To emergent as opposed to *ante facto* goals—since each child has to re-interpret the symbolic quality of the culture into which he is born. To a concern with the child's own subjectivity and intentionality (p. 172). To communication viewed as "speaking, writing, drawing, singing, dancing, constructing, listening, reading, and viewing." (One wonders whether in that order of priority?) To community involvement and a less sterile separation of school from society. To self-actualization—the all-pervasive Maslowian model once again. To change! Not clear at all this last. It never is.

And so it goes. A symphony of sorts which would not fall harshly upon an educator's ears for it is, after all, an aggregate of themes and *Leitmotiven* with which he is thoroughly familiar; it is indeed the sound of orthodoxy, the conventional wisdom *ex cathedra*, with counterpoint provided by the chorus of "back to the basics." It provides no surprises. It is the old neo-progressivism well modulated by conservatism.

Here then we come to what is perhaps the chief and most useful function of such policy making exercises as the Harder discussion paper. It is, consistent with Vickers, to modify the appreciative setting. Each time the establishment is forced by such initiatives to put down in words its position, it is made to engage in self-scrutiny, the clarification and justifications of its values, and the *modulation* of those values in rèsponse to the shifting, evolving socio-cultural context. Given the shifts which have occurred in Alberta, Canada, and North America in that context over the last generation (among the most significant of which must surely be the media explosion and the pervasion of technology) and given the values diffusion and confusion (not to mention dilution) of contemporary society, it is remarkable that the dominant philosophy of education has endured with such little change and so few surrenders. One speaks here of philosophy not so much in any textbook or academic or rhetorical sense but as it "cashes out," as it becomes manifest through the institutions and processes of educational administration.

In his concluding remarks Professor Stewart, a co-editor of the book, refers to this indirectly when he asserts that the curriculum process "implicit in the Harder proposals is a bureaucratic procedure exceedingly cumbersome and time-consuming which has historically proved ineffective" (p. 296). The alternative and the right way to go about curriculum development is, he says, at the school level of organization through cooperation between teacher, pupil, and parent with "freedom for *these people* to define objectives, select content, organize learning tasks and monitor progress" and freedom from "burdens and constraints which interfere with the performance of these tasks" (p. 296, my italics). An innocent might ask, Is this not a largesse of freedom? And a less innocent might ask, Who are *these* people? Do these people translate into teachers? And teachers translate into vested interests? The answers to all these questions would no doubt invoke the term "professional." Indeed, the concept of an education profession is at the back of all that is presented in this book. This profession would not necessarily have an inaccessible and esoteric body of knowledge confined to its initiates (as is much the case in medicine and less so in law) but it would presumably have an acknowledged mastery over the problems defined by its rubric. What these problems are in education come through clearly in a reading of this book as does the degree and state of mastery. What comes through besides is the coherence and consensus of curriculum opinions and a sense of the power, latent and manifest, of the educational establishment.

I began by recommending this work as a text for educators in the conventional wisdom of curriculum, but must end by recommending it no less as a text of desirable reading for all practitioners in the politics of education. Those who dabble in the art of the educationally possible may gain thereby while those who seek for accountability may seek forever unless they first learn that the questions they ask and the answers they create are dialectical, iterative, and proximate.

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BOOK REVIEWS

EVALUATING THE NEW B.ED. *Edited by Gerald Collier.* Surrey, England: Society for Research into Higher Education Limited, 1978, 120 pp.

In teaching, as in acting or athletics or industry, there exists no shortage of assumptions explaining success. These include liking it, practising it, even having a natural talent for it. One latter-day supposition about teaching is that if you train for it at a university, you'll do a better job. Albertans adopted this stance back in 1945 and Canadians elsewhere at length fell into line. In Britain, however, moving preservice teacher education largely on campus happened more recently, following the 1972 James *Report* and the White Paper, *Education: A Framework for Expansion*, appearing the same year. Several consequences of these documents— the assumption that teachers ought to hold degrees, that teacher education should be carried out in larger institutions, that training courses (we would say programmes) should undergo periodic scrutiny by the Council for National Academic Awards—prompted *Evaluating the New B.Ed.*, a collection of conference paper competently edited by Gerald Collier of the University of East Anglia's Centre for Applied Research in Education.

You will readily discover that this book is methodologically oriented. Granted, Staff Inspector Ian Butterworth and CNAA Officer David Francis offer personal impressions of how, despite academic politics, newly-located programmes have tried to reconcile school experience with university studies. Admittedly, Nottingham's James Eggleston and Ted Wragg proffer down-to-earth approaches to programme evaluation, warning respectively of crude eclecticism and narrow, competency-based teacher education calculated merely to prepare novices "for schools as they are." To be sure, Peter Miller of Keswick Hall College and Robin Alexander of Didsbury College, Manchester and the University of Leeds reflect on problems arising from the practical, political, and psychological sides of evaluation, including establishing institutional states of mind receptive to it, and realizing as it is carried out that the character of good teaching can be unpredictable and "essentially elusive." Just the same, strategy and methodology occupy the larger share of available space. Proponents include Michael Eraut from Sussex; Robin Alexander; Roland Hoste of Leeds and Stirling; Clem Adelman from Bulmershe College of Education; Birman Nottingham of St. Martin's College, Lancaster; and Dan Wicksteed, Worcester College of Higher Education. At a time when accountability in some form or other dogs the

footsteps of many an education faculty, what they have to say will interest all engaged in or answerable for teacher education.

A succinct argument for sound research design, Eraut's paper demonstrates the conflict between intrinsic and extrinsic purpose in evaluation, the one serving a research, the other, a political community. It reviews the relative merit of preformulated hypotheses compared with more open-ended procedures. Finally, it considers evaluation as a normal social process best effected through a systematically-elaborated agenda negotiated with client groups as to content, purpose, and needed cooperation. Alongside this theoretical piece appears Alexander's lengthier account of setting up an actual internal evaluation at Didsbury College. Instigated to improve teaching, the exercise constituted an agreed-upon feature of Didsbury's administrative policy and was carried out by staff and students lest evaluation "become a tool of senior management." In order to produce a "cumulative profile," Didsbury utilized questionnaires, open, written responses, interviews, and meetings with school teachers. They also observed classes in session, consulted college records, and in one instance invited an outside opinion. Hoste's briefer offering draws attention to typical impediments. The internal evaluation proves unaware of blind spots. Staff social relations or student anxiety over results contaminate objectivity. Sampling is narrow. By contrast, Adelman writes about an independent evaluation of three colleges. His team was affiliated neither to staff nor students and his data governed by an "ethical framework" intended to protect those interviewed. Two additional essays complete this section. One, Nottingham's "The First Stages of an Evaluation Exercise, " stresses the early need to get a feeling for the programme as a whole. The other, Wicksteed's "How to Begin an Evaluation Programme," identifies characteristic objections to evaluation including the contentions that we should teach, not evaluate, that we in any case regularly evaluate student performance, and that curriculum design is a matter of professional judgment, not majority opinion, particularly from students! Overcoming this sort of skepticism occupies the author for the balance of his summary.

While preparing *Evaluating the New B.Ed.*, Gerald Collier no doubt experienced the usual challenges confronting conference paper editors. For one thing, contributions appear uneven as to bulk, content, and style. Quite apart from their intentional variance—theoretical as opposed to practical purpose; analytical as distinct from descriptive realization—some attain lean objectivity whereas others bog down a bit in awkward metaphor or self-conscious autobiographical flourishes. I compare here Alexander's structured composition with Francis' penchant for machine imagery or Nottingham's fascination over his own status as an Anglican clergyman. For another thing, Collier faced the inevitable bits and pieces that conference proceedings generate and tucked them in as best he could. Hence, discussion in varying length augments some but not all papers. Where appropriate, notes and references follow. Some papers are set off so as to show clearly their beginning and ending. Others run visually one into

the next. In a low-budget publication, though, these organizational peccadilloes are of little consequence. I don't envy a conference editor his task and concede that editorially, this indexed collection reads well enough.

With regard to theme, I repeat that the chief concern is method. *Evaluating the New B.Ed.* doesn't really assess changes triggered by the 1972 James *Report* and White Paper, though such a book would be welcome. Rather it furnishes impressions, opinions, even models of how, in particular institutions, we might go about assessing such changes. Happily for the book's credibility, contributors warn time and again of the probable idiosyncratic nature of evaluations to which they refer. Overall, though, the work effectively highlights the difference between internal and independent evaluation, the one approach constantly menaced by "occupational tunnel-vision" (Scriven's phrase), the other occasionally vulnerable to political misuse. With its chapters anchored in a rich and recent literature of curriculum evaluation, its contentions enjoy high transfer potential of exceptional value to teacher educators, their wider clientele, and those who legitimize and fund their efforts.

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TEACHER PARTICIPATION: A SECOND LOOK. *By Robert B. Carson and John W. Friesen.* Washington, D.C.: University Press of America, 1978, 97 pp.

Teacher participation in decision making has been an important area of study for a number of years. However, problems related to it are still largely unresolved. As a consequence, attention to this area is vital in order to develop understanding of the dynamics of shared decision making in schools.

This book reports research on the nature and degree of teacher participation in decision making. Its significant contribution, though, rests on the attempt to make a longitudinal study of changes in teacher participation in decision making. The authors are concerned with the question that is always important, "Who influences the choice processes that structure educational opportunities for kids?" They are also interested in what happens over a period of time to participatory decision making.

The authors make important contributions both in substance and in methodology related to their theme. The impact of their presentation could be aided by the three suggestions that appear to be justified from a reading of the text. These will be explained briefly.

The authors uncritically accept certain assumptions that one might think would need further elaboration and support from theory or other research. For instance, they assume that the reader is fully aware of the nature of participation in decision making. There is no attempt made to define the complex concept which is the subject of the study. Presumably this has been addressed in the earlier work on teacher participation. However, the failure to clarify the subject of the research presents some difficulties for the reader.

Another assumption of the authors is that the reader will be able to bridge the gap between the literature review and the study itself without being given a paradigm or conceptual framework. In fact, the literature review deals with a number of studies on the extent of teacher participation in decision making, but hardly touches on changes in the desire for participation by teachers over time, which happens to be the main thrust of the study.

One more example of a questionable assumption relates to the inferences drawn from the data. The reader has difficulty seeing how the responses on the four-point scale can be reduced to a single percentage figure for each item, especially when the scale is not a continuum from no involvement to full involvement in decision making. For instance, how did the researchers obtain the data that 96.9 percent of the teachers "consider formal participation in decision making by teacher to be appropriate" for curriculum planning and development?

The book presents an interesting opportunity for longitudinal studies on changes in teacher participation in decision making. Difficulties with this type of research are usually almost insurmountable. Hence, the book is a laudable achievement. The fact that weaknesses are apparent does not deter from the significance of the theme and methodology inherent in the book. It can serve as a stimulus for further research on trends in participatory decision making in schools.

Placed in proper context, and viewed within the limitations mentioned above, the publication points out again the complexity in the normative view of participation in decision making. The desire of teachers for more participation may have increased slightly during the nine-year period. However, teachers are generally "content with participation in matters related to their classrooms. " Administrative matters and policy decisions still do not call for significant teacher input. Nor do teachers generally demand a greater input in those areas.

Administrators seem to see teachers as formal participants in a number of areas of decision making, even though teachers are not seen as having the authority to establish policy in any area.

The last chapter of the book contains valuable information on participation in decision making in schools. It could be especially useful for researchers, teachers, and teachers' associations.

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PIAGETIAN THEORY AND THE HELPING PROFESSIONS. Proceedings of the 7th Annual Conference, Vol. 1. *Edited by Roma Wergmann, Richard Brown, Philip J. Levinson, Priscilla A. Taylor.* Los Angeles: University of Southern California, 1978, 432 pp.

The work under review, *Piagetian Theory and Its Implications for the Helping Professions*, consists of the proceedings of the Seventh Interdisciplinary Conference of the same name. The 1977 conference was sponsored by the Schools of Social Work and of Education, University of Southern California, and the University Affiliated Project, Children's Hospital of Los Angeles. Emphasis during these particular sessions was on the implications held by Piagetian theory for social work and psychological services.

This volume of the proceedings consists of the two keynote presentations, delivered by H. W. Maier and P. Mussen, plus 45 submitted papers selected on the basis of their relevance to the conference theme. Despite the heterogeneity of interests reflected in this book, a majority of papers are focused on cognitive development in subjects suffering from some form of impairment. In addition, a number of studies are also presented which examine basic issues in Piagetian Theory (for example, the concept of knowledge, the assessment of formal operational thought, etc.). Of particular interest to this reviewer was the comprehensive bibliography of scholarly works on moral development for the period 1970-1976, prepared by Clifford Lange and the paper by Barbara Kane pertaining to a Piagetian discussion of the development of children's concepts of death. In general, due to the multifaceted and interdisciplinary nature of the conference proceedings, the resulting compendium might best be viewed as a research journal.

Although a number of papers will prove interesting to the Piagetian researcher, this reviewer restricted himself to the keynote presentations. Maier's paper is unique and intriguing in that he applies Piagetian concepts and precepts, specifically those associated with the sensory-motor phase of development, to the initial stages of the helping relationship. The theme of the paper is best summarized in Maier's own words:

> In essence I maintain that a whole period of development (more than a year of impactful life experiences) precedes language development. Similarly a whole progression of interpersonal experience at the beginning of the helping continuum influences the progression of the helping process. These beginnings always precede a more definitive assessment and treatment undertaking. (p. 12)

Mussen's paper, dealing with the roots of pro-social behaviour in children, also proves useful and stimulating. He provides an excellent review of the current research and literature concerning his chosen topic, noting the importance of Piaget's formulations on moral development to this area, but goes on to state that "Piaget's work is of some, but only minor, help." Mussen then proceeds to examine the development of pro-social behaviour from a variety of perspectives including (1) moral judgement, (2) socialization, (3) the effects of modelling, (4) identification and generosity, (5) studies of adult altruists, (6) parental nurturance, (7) the use of power assertion and induction as disciplinary techniques, and (8) maturity demands and the assessment of responsibility.

Mussen concludes, as a result of his study of the area, that scientific findings often confirm much of what is professed in folk wisdom. In Mussen's opinion,

> There are a number of substantial truths about child rearing practices and prosocial behavior that can be distilled from the findings of these studies. They are not surprising or sensational; in fact, perhaps one of the most interesting general conclusions is that techniques that many sensible people have used for millenia are conducive to the development of prosocial behavior: modeling prosocial behavior, especially be a nurturant model, and identification with a prosocial parent; induction— that is, reasoning and explanation— rather than power assertion in disciplining the child; making reasonable maturity demands. It is comforting to find that scientific findings confirm that much of what is advocated in "folk wisdom" actually works. (p.27)

Mussen ends his paper with a note of caution. He emphasizes that we are still far from a complete understanding of the problems of pro-social development and pro-social conduct and stresses the need for a number of further investigations, particularly those of a naturalistic nature. He believes this approach preserves the complexity of the situation while allowing the investigator to examine how the determinant variables of pro-social behaviour interact to enhance or inhibit the development of this form of behaviour.

As was stated earlier, this volume is a compendium of topics, perspectives, and research findings based, in varying degrees, on Piagetian theory. Its strength lies in the honest attempt being made by the conference organizers and others to apply Piaget's concepts to the helping professions. Conversely, the current state of the art constitutes the book's greatest weakness; although specific papers are thought-provoking and informative, the volume lacks systematic organization and structure. In the opinion of this reader, the proceedings mirror the diversity of opinions and interests centered around the use of Piagetian concepts in applied settings and, as such, are worthy of consultation and perusal by those interested in this area.

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PREPARATION OF MANUSCRIPTS

1. All manuscripts must be typewritten, double spaced, and submitted in duplicate. An abstract of approximately 100 words in length, typed on a separate page, should be provided.
2. Tables must be numbered in Arabic numerals with the word 'Table' centered and in capital letters, e.g., TABLE 4. The heading of the table is to be centered below and typed in capitals. The format of tables should conform to the specifications in the APA Publications Manual.
3. Graphs and charts should be used only if essential. They must be carefully prepared on separate sheets in India ink, ready for reproduction. Graphs must be properly labelled using Arabic numerals, e.g., Figure 3.
4. Each table or figure should be presented on a separate page. The position of tables and graphs should be clearly indicated within the text by inserting at the relevent point the phrase (Insert Table 2 here).
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6. Explanatory notes, numbered consecutively and identified in the text with a superscript, may be included under the heading of *Notes.* They should be double spaced and placed at the end of the manuscript immediately preceding the *References.* The citing of references and quotations in the *Notes* should conform to the procedures outlined in No. 5 above.
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